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ART. I. *Observations on* PHLEGMASIA DOLENS.

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PHLEGMASIA DOLENS must be enumerated among those diseases whose causes recent inquirers have laboured to ascertain without arriving at a conclusive decision. The complaint is of comparatively rare occurrence, and its connection in most cases with the puerperal condition, has induced writers to adopt an hypothesis respecting its origin too exclusive, and as to its nature unsatisfactory. The theory of the earlier authors,* which ascribes it to a metastasis of the milk supposed to be deposited in the cellular membrane of the pelvis and inferior extremities, instead of being carried to the breasts, is, at the present day, almost universally rejected; and the latest observation and experience have furnished numerous facts inconsistent with the ingenious theories advanced by White, Trye, Ferriar, and Hull.

It is now generally admitted, that phlegmasia dolens is a more common affection than was formerly supposed. I am also of opinion, that the disease often exists independent of the puerperal state; that there is less uniformity as to the period of

* Dioscorides; Levret; Mauriceau; Sauvages, Nosolog. Method. tom. ii.

its occurrence, and in the manner in which it invades the system, than is for the most part described; that other parts than the inferior extremities may, under particular circumstances, become its seat; that it is not unfrequently a consequential disease, both various in its causes and formidable in its character; and that it is susceptible of a more active and vigorous method of treatment than is generally recommended.

In the cases of phlegmasia dolens which have fallen within my own immediate observation, I have not been able to trace any particular connection between the occurrence of the disorder and a rheumatic diathesis, or that rheumatism had at any time preceded the occurrence of that complaint. In the practice of others I have repeatedly heard of this association. There is unquestionably in many cases a connection between the puerperal state and phlegmasia dolens; yet the latter has taken place where the former had not existed; or where the interval was so great as to forbid the presumption of any relationship. Mr. White seems to have proved that those females who do not give milk are more obnoxious to the disease than those who nourish their offspring: yet this singular complaint happens where the mammary discharge is neither obstructed nor diminished. In the instances which I have seen there was neither suppression of the secretion nor of the flow of milk. Indeed, such suppression I consider rather as the effect than as the cause of the disease. The same observation applies, and with equal force, to derangements of the lochial discharge. Too many cases are recorded to the contrary to admit that the reflux of the lochia had any agency in causing phlegmasia dolens; for where the lochial evacuation was perfectly natural, the complaint has exhibited itself.

Cases of phlegmasia dolens have occurred in which the disease has transferred itself, in the same lying-in, from one limb to the other. The same individual is liable to its attack a second time in the same limb; and in the history of a patient communicated to me by Professor Macneven, it will be seen that the same individual was four times afflicted with

this distressing complaint in four successive labours. At each recurrence it attacked the same limb, the right, and was characterized by all the diagnostic signs of the disease.

I shall here insert the account which I have received from Dr. Macneven, of this remarkable case.

" Mrs. M. has had four attacks of phlegmasia dolens in four successive confinements. In the first attack it invaded the hip, and was of long continuance. This was before I came into attendance. The second began on the inside of the thigh, near Poupart's ligament. The third chiefly held the calf of the leg; and the fourth was again in the same part of the thigh. In no case was the pain very acute while the limb was in a state of rest, nor was motion quite impeded but when the calf of the leg was chiefly affected. The whole limb was swelled and tense.

" I learned from Mrs. M. that in the first attack of this disease her physician used fomentations and frictions.

" During the second I employed the anti-phlogistic treatment; and as soon as I had considerably reduced the febrile symptoms, directed the use of gentle frictions, with camphorated spirit and laudanum, together with the use of a flannel roller from the toes to the hip upward. She recovered in about a month. Upon the third occasion the pain was first felt at the groin; but on walking a few steps across the room, it suddenly shifted to the calf of the leg. From that moment all motion was impracticable, and the disease becam emore acute than upon any former occasion. I gave an ounce of spirits of turpentine. It produced considerable irritation, and speedily mitigated the pain; and in forty-eight hours the patient was decidedly convalescent. I had recourse, nevertheless, to the bandage and frictions which had given so much comfort in the former attack, but rather to prevent evil than from any actual necessity. As the lady was remarkably fleshy, she was constrained to wear drawers in order to give an attachment to the roller at the top of the thigh.

" The fourth time, which was during the last winter, I enjoined upon my patient confinement to her bed, kept her bowels constantly loose, gave her water gruel and low diet, and under

this management for ten days, she entirely escaped. Every former access of the complaint was within this limit of time. Thinking herself now secure, she began to walk in her room, and after a few turns, had some slight intimations of the disease. I recommended that she should keep to her arm chair, have the leg horizontally supported, use the friction and bandage; through which means she was in a few days perfectly well."

It is not within the experience of any of my fellow practitioners, that I have learned, that phlegmasia dolens has succeeded to abortion.

Dr. Dickson, of Clifton, in England, has furnished us with an extraordinary instance of death from uterine hæmorrhage supervenient to phlegmasia dolens. A woman, on the fourth day after delivery, was seized with rigors, pain in the foot and leg, which afterward extended to the thigh and groin. With the intermediate symptoms and treatment he was unacquainted; but on the tenth day of the attack a practitioner was sent for, who directed twenty leeches to be applied to the afflicted limb, which was nearly twice the bulk of the other. The bleeding, he adds, continued after their removal for the greater part of the night, and on her attempting to get up, a flow of blood suddenly escaped from the uterus, which proved fatal.

Dr. Hull informs us, that he has seen cases of phlegmasia dolens which have terminated in suppuration, as also in death. Dr. Mann, of Boston, was called in consultation to a case of this disorder, where the attending physician, supposing the swelling contained some fluid which required an evacuation, had, previous to the visit by Dr. Mann, made an incision through the skin and adipose substance of the enlarged limb, for the purpose of discharging the contents of it. "Herein," adds Dr. M. "he was not only disappointed, but to his mortification the incised part immediately became gangrenous; a sphacelus of the whole limb soon followed, which terminated fatally in about ten days after the operation."*

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* Communications of the Massachusetts Medical Society, vol. ii.

The disease has arisen after the system has been prostrated to an extreme degree by uterine hæmorrhage. The particulars of an instructive case of this kind I have received from Dr. Handy of this city. Fifty-three days after excessive flooding, and just as the patient was slowly convalescent, a swelling of the left leg suddenly appeared, from the hip downwards, characterized by a white, elastic, tense, and shining appearance, with the other concomitants of phlegmasia dolens, excepting, fortunately, extreme pain and tenderness of the diseased limb when touched.

I shall now enumerate some of the leading circumstances of the cases of phlegmasia dolens which have come within my own observation; purposely rejecting minute details, as unnecessary or superfluous.

The first case I saw of this disease occurred in 1811, in a female of about the middle period of life. There appeared to be no connection between it and the condition of the lochial evacuation. The swelling took place on the fourth day after delivery. In the summer of 1814, I was requested by Dr. Scudder to visit, in consultation, a patient whom he had delivered about two days previous. She was the mother of three children, and had not before been affected as at this time. Her last labour had been in no wise painful or tedious, and the state of the lochia and of the mammæ was natural. The disease in this case was not preceded by rigor or shivering, and began at the lower part of the calf of the left leg, and had, at the time of our visit, extended to the superior part of the thigh; and such was the rapid progress of the swelling, that the whole limb was distended to double its ordinary size. The sufferings of the patient were exquisitely severe whenever she made any exertion to move herself, or upon the least pressure being made upon the extremity. Symptoms of active febrile irritation accompanied the disorder.

In November, 1820, I saw another formidable case of this disease. In this instance, the characteristic marks of the affection did not show themselves until fifteen days after parturition

in a first labour. The subject of it had so far recovered from her lying-in as to remove to a distant part of the city as her intended residence. She had a free supply of milk, suckled her own child, and nothing untoward took place as to the uterine discharges. Neither in this case, nor in the two preceding, did there occur that limited swelling of the labium of one side which Mr. White considered as constituting the principal diagnosis of phlegmasia dolens, but evidences of strong vascular excitement and inflammatory action manifested themselves.

In these two latter cases a like plan of treatment was adopted. Copious venesection, free evacuations from the intestinal canal by calomel, or the saline cathartics, occasionally a solution of the antimonium tartarizatum, or small doses of the oxydum antimonii cum phosphate calcis, were administered, and fomentations of tepid vinegar and water applied to the limb. After the active stage had subsided, the patient's strength was supported by the moderate use of nutritious diet and the application of the volatile liniment and flannel roller. In the second case, rigidity of the diseased limb continued several weeks after the removal of the affection.

I have already affirmed that phlegmasia dolens may and does, occasionally, arise independently of the puerperal condition. In fact, the disease is sometimes so little connected with the female functions, that we find the other sex not exempt from it.

I shall state the particulars of an attack of this disease, which I witnessed in 1814, in a young man, who had previously suffered from a long protracted typhus fever. The swelling was first observed in the left groin, which created pain upon motion, and when the limb was at all extended. After remaining several days in this condition, he was accidentally exposed to a stream of damp cold air: within twenty-four hours after this, the leg and thigh were swollen to twice their ordinary size. The skin was smooth, tense, and elastic, and of a shining white appearance; the whole limb was painful to the touch, with great heat of the part, and febrile irritation of

the system. This enlargement continued about two weeks, when, by the diligent use of stimulating applications and by bandages, the patient was enabled to walk with the aid of a cane. Dr. Purdy, the subject of this case, has published a fuller account of it in the first volume of the Transactions of the New-York Physico-Medical Society.

Dr. Heermans, of Ontario county, state of New-York, in a letter to Dr. J. B. Beck of this city, has detailed the history of a case of phlegmasia dolens in a young man aged nineteen; and so far as a single instance can be brought to militate against a general rule, it furnishes conclusive evidence that the superior as well as inferior extremities may become the seat of this disease. The patient was subject to rheumatic affections, and had been exposed to inclement and rainy weather some days before his illness. The symptoms of the disorder first exhibited themselves in the calf of one leg, and rapidly extended to the groin, with increase of pain and inability to move. His sufferings were so acute that he was unable to bear the slightest pressure or contact with the skin. At the lapse of thirty-six hours the limb was enormously distended, and had acquired the glabrous aspect and other pathognomonic symptoms of this striking affection. A similar swelling soon commenced in the other extremity; it began at the groin and descended in this leg as rapidly as it had ascended in the other, with the same sensation and appearances. The swelling now continued in both legs down to the extremities of the toes. On the fourth or fifth day, according to Dr. Heermans, the patient complained of the same kind of pain and swelling of the parts about one of the shoulders; but it did not diffuse itself with the same violence and rapidity as it had done in the lower extremities; in like manner the other superior extremity was assailed; after ten days from the first attack, the swelling and distress began to subside in the order in which they commenced; with the exception of the left arm, which continued distended seven or eight weeks, before it was reduced to its natural size. The disease was treated by active depleting remedies, frictions, and fomentations.

Mr. B. aged about seventy, had enjoyed for many years excellent health: after considerable pain and lameness, for some time, of a rheumatic nature, extending down to the foot without any known cause, he was attacked suddenly, with a general swelling of the right lower extremity, attended with fever, and considerable tenderness to the touch. It had the smooth and shining appearance of anasarca, but to the feel it was much harder and more painful. At no time was there the least redness about the limb; for several months at least this was the condition of it after the commencement of the disease. The glands of the groin were considerably enlarged in a short time after the swelling began, particularly the upper row. After the pain and tenderness had in a great measure subsided, evidences of a watery effusion became evident in the cellular substance about the foot and ankle. For several months, however, it remained without the least evidence of water in the cellular membrane.

From the aspect and circumstances attending this case, Dr. Mott, the attending physician, was early impressed with the idea that it was an affection similar to the phlegmasia dolens. The effusion of water in the cellular membrane, about the ankle and foot, must be considered as the sequelæ of the disease, arising from vascular debility. From this result, occasionally attending phlegmasia dolens, the disease has been erroneously considered by some as a species of dropsy.

I shall here briefly notice one other case of phelgmasia dolens, afflicting a male. The patient was a subject of the New-York Hospital, during the winter of 1821-2, and under the care of Dr. Hosack. the attending physician. He was aged about forty years; was by occupation a sailor; and, at the time he entered the Hospital, was greatly debilitated by an obstinately protracted remittent fever. Phlegmasia dolens seized his left leg and thigh, which became greatly enlarged, painful, and glabrous; extensive suppuration took place in the thigh, which finally burst, and discharged a large quantity of purulent matter: at the end of two weeks, it eventuated in death.

This termination of phlegmasia dolens in suppuration, rarely happens. A more common result is in a permanent enlargement of one or other of the extremities. In the Transactions of the Medical and Chirurgical Society of London, Mr. Chevalier has described a case of disease occuring in a female aged forty-six years, who had laboured for fourteen years under an enlargement of the right lower extremity, and in which an anomalous alteration was produced in some parts of the cutis; the bulk of the limb depended upon an extraordinary growth of the skin and adipose membrane. The swelling first arose after a labour, which it appears was succeeded by an attack of the œdema puerperarum, which at length somewhat subsided, but never completely disappeared. After she began to go about, the tumefaction again augmented and extended higher; and from that time it gradually continued to increase in bulk, and to become more painful. After the disease had existed nine years, it became so unwieldy as to prevent her walking. At the time Mr. Chevalier saw her, it measured three feet six inches round the thigh, and two feet round the calf of the leg. The whole length of the limb measured, from little above the great trochanter of the thigh bone, three feet three inches: at this part the enlargement terminated by an almost definite line. At the top of the foot the skin was so immensely expanded, as to project several inches beyond the toes, overhanging them so that all except the great toe were imbedded in it. "On the under surface of the foot and toes, and also on part of the upper surface, the skin yielded irregularly, and in some parts it was elevated into tubercles which were exquisitely sore, and many of which from time to time withered at the base, and dropped off. The cuticle was every where thin and chapped. In some parts, particularly at the bottom, it was sodden, being continually moistened by a serous fluid, which was discharged from almost the whole surface of the limb, and which, by its quantity, greatly impaired the patient's strength. The whole surface was inflamed and tender, though not so much as the magnitude of the disease would have led one to apprehend. The left leg," adds Mr. C. "was not at all enlarged in any point." About a fortnight be-

fore her death a small portion of the skin sphacelated, and a considerable quantity of serous fluid drained off from the cellular membrane, by which the size of the limb was in some degree reduced. Her sufferings terminated in death.

I have ventured to introduce thus much of this case in this paper, as an example of one of the terminations of phlegmasia dolens, and because it will serve as a caution in our prognosis. Besides, I have seen two other cases of a similar kind. In the one the patient was an indigent female in the New-York Almshouse, aged twenty-five years, who, as nearly as could be ascertained, had been delivered of her first and only child about five years before. The enlargement took place some few weeks after her confinement, which gradually increased to almost the same size as in the instance just stated; it also was exquisitely painful to the touch, and assumed much of the same external appearance. The other was a patient of St. George's Hospital, London, in the winter of 1816, under the care of Mr. Brodie. I have not been informed of the event of either case.

Perhaps the foregoing facts may tend to elucidate the pathology of phlegmasia dolens. I forbear at this time to enter more fully into the subject. Future observation must assign to the disease its proper rank in nosological arrangement.

New-York, March 4, 1822.

ART. II. FACTS *and* OBSERVATIONS *relating to the* YELLOW FEVER *which prevailed at the Quarantine Establishment at Staten Island, New-York, during the Autumn of* 1821; communicated to the Editors: By JOSEPH BAYLEY, M. D. Health Officer of the Port of New-York.

THERE is scarcely any subject of greater interest to the inhabitants of our cities on the Atlantic, than that of yellow fever. Whenever this pestilence prevails, our commercial prosperity is retarded at home, and embarrassed by long and expensive quarantines abroad. Many valuable lives are lost to the community; many families are left to deplore the premature death of

their relatives, on whom they depended for protection and support. Such are the real and not fanciful consequences which result from this fatal fever, whenever it prevails in populous places. It is, therefore, an incumbent duty on every person, whose situation affords him the opportunity, to investigate this subject, so that a number of well attested facts may be collected, in order that we may, if possible, discover the best means of preventing the recurrence of this formidable scourge of our seaports. With this intention, the following facts and observations on the origin of yellow fever at the Quarantine Establishment at Staten Island, during the last autumn, are communicated.*

The violent gale which occurred on the third of September, drove on shore about thirty vessels which were lying at quarantine, and as several cases of yellow fever took place a few days after that event, some persons, perhaps, may be inclined to attribute the disease to the damaged cargoes of those vessels; but it will hereafter appear that it cannot be ascribed to that cause: and the cases of the Rev. Mr. Hardenbergh and Seth Waite, (particularly the former, who was not there during or after the storm,) are an evidence that the contagion of yellow fever existed at the United States wharf, anterior to the gale. For this reason, we will first examine into the circumstances of those vessels which were at that place before the gale. They consisted of the ships Amphion, Ann-Maria, Lucy-Ann, and Le Herondelle, all from the sickly port of Havana; the brig Lion, from a cruise, and the schooner Betsy, from Wilmington, N. C. (at which place a malignant fever was raging, when the Betsy sailed.) They arrived at Quarantine between the 14th and 26th of August, and were brought to the United States wharf between the 23d and 31st of the same month.

The ships Ann-Maria and Lucy-Ann sailed from New-Orleans, in stone ballast, the beginning of June, for Pensacola, and transported from the latter place about six hundred Spanish

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* For the benefit of distant readers it may be proper to state, that the Quarantine Establishment is about six miles below the city, on the west side of the Bay of New-York. *Ed.*

troops to Havana, who were on board eleven days, and were all landed in health. Those vessels remained only five days at Havana, and their crews continued healthy until they sailed from it; although the yellow fever prevailed there at the time. On their passage from Havana to this port, one seamen died of yellow fever on board of the Ann-Maria, August 6th, and one on board of the Lucy-Ann of the same disease, August 13th. Some of their seamen were indisposed on the passage from the West Indies, and the mate of the Lucy-Ann was convalescent from an attack of yellow fever, when the ship arrived here, August 20th. These vessels remained in the stream from seven to eleven days, during which time they were ventilated, and their forecastles and holds were white-washed. The ballast of the Lucy-Ann was overhauled, and the place where it lay was also white-washed; but nothing had been done with the ballast on board the ship Ann-Maria, since she sailed from New-Orleans.*

The ship Amphion arrived here August 16th, and one man

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* The ship Ann-Maria had been used as a transport to convey Devereux's troops from Ireland to the West Indies; afterwards she proceeded to New-Orleans, from whence she sailed to Havre de Grace, with a cargo of cotton; then returned to New-Orleans, where another cargo of cotton was put on board of her, with which she sailed to Pensacola, and there it was delivered on board of a French ship lying in the bay. The Ann-Maria then sailed back again to New-Orleans, where she was purchased by her commander, Capt. Anthony R. Gale, (in May 1821,) who being anxious to know what was the condition of her ballast, and how much of it was iron, employed about twenty men for a week to overhaul it, and to clean out her limbers. None of these men were taken sick, and the chief mate, who superintended the work, enjoyed uninterrupted health from that time until she was brought to this city. This vessel sailed from New-Orleans in ballast, and received no cargo on board from the time she last left that port, until she arrived here. It appears, therefore, that none of the alleged causes of yellow fever existed on board of her previous to her arrival at the sickly port of Havana, where she must have received the contagion of yellow fever, which manifested itself on her passage to this port, and which was communicated to six persons employed on board in discharging her ballast at our Quarantine, in September last.

died of yellow fever August 5th. This vessel lay in the stream seven days, where her cargo of coffee and sugar was put in lighters and sent to the city; but the tallow in hides and casks, which was taken on board at Buenos Ayres, was retained for ballast until she was hauled to the wharf, where it was landed previous to the gale. She was ventilated and white-washed while in the stream, except that part of the hold which was occupied by the tallow.

The crews and passengers of those three ships, forty-five in number, were released from Quarantine before the gale, as twenty days had expired since the last death had occurred on board; but three of the crew remained in each vessel to take care of them.

The ship Le Herondelle having arrived in distress, permission was given to take her to the United States wharf, the 28th of August, three days after she came into port. Two of her seamen died at Havana, one on the 18th, the other on the 20th of June; but from that period until the 1st of October, when she was taken from Quarantine, not one of her crew, consisting of eleven persons, was taken sick, although the ship lay alongside of the United States wharf the whole time, with all of them on board, except the supercargo. Her cargo consisted of sugar, cotton, rum, indigo, and dye-wood, which was principally discharged before the gale; and what remained in her was but little damaged.

The brig Lion arrived in ballast at this port, August 14th, from a four months' cruise off the coast of Spain, via St. Bartholomews and St. Eustatia, where her crew, of one hundred and fifty men, were discharged in health. The crew which navigated her to this place, were shipped from those islands without going into port with the vessel, and continued in health during the passage. This brig, after performing the usual Quarantine of four days, directed for vessels coming from healthy West India ports, with healthy crews, was permitted to proceed to the stream opposite the city, but three days after, she was removed to Quarantine again, as one of her seamen was taken

sick with fever of a suspicious character, which afterwards, however, was ascertained not to be the yellow fever.

The schooner Betsy from Wilmington, N. C. was taken to the wharf the 27th of August, the day after she arrived, where her cargo of cotton and turpentine was unloaded in three days. Her crew consisted of five persons, who were healthy during the voyage, and continued so when discharged, the 5th or 6th of September.

From the foregoing statement, it appears that three of those vessels, lying at the wharf before the storm, arrived in ballast; two others had discharged their cargoes in good order; and that part of the cargo which was unloaded before the storm from the sixth vessel, was also in a sound condition. The crews of the three first-mentioned ships had been discharged, except their ship keepers; and the ship Le Herondelle and brig Lion being foreign vessels, their crews, who were also foreigners, and used to the West India climate, continued attached to their respective vessels until late in October, and enjoyed good health all the time they were at Quarantine, although they resided at the United States wharf the whole time. The gale drove the ship Ann-Maria on the rocks, 630 feet from the United States wharf, where she remained until the 20th of October.* The ship Lucy-Ann was driven on shore, but was got off the same high tide, and again hauled to the wharf. The ships Amphion and Le Herondelle retained their situations at the wharf. The brig Lion and schooner Betsy were sunk at the wharf, where the brig remained until November, and the schooner about three weeks.

All the persons who were taken sick with yellow fever the last year at Staten-Island, after the 3d of September, had been repeatedly on the United States wharf, near to those vessels, for

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* If the yellow fever was produced by the cargoes of vessels getting damaged in the gale, another cause must be assigned for its taking place in this ship, as she arrived without any cargo, and was at too great a distance to be in the least affected by any other vessel.

some hours at a time, or worked on board one of the four ships from Havana, except Capt. Van Beuren's daughters, and the three females of the Sinclair family. This wharf having been the focus of the disease, I have deemed it necessary to relate minutely the circumstances of some of those vessels to the time of the gale, and of others until discharged from Quarantine, but shall again have occasion to refer to some of them when tracing the probable source of disease, in individual cases.

A great many vessels having been driven on shore the 3d of of September, the condition of those only which were stranded between the United States and the State wharves, will be examined into ; for the others were at such a distance, that they could have no agency in adding to the infected atmosphere of the place. Fourteen vessels were driven on shore within the above mentioned limits, and they can with evident advantage be divided into two classes, viz: those that were from healthy ports, and those which sailed from unhealthy ports, or had sickness on board. The vessels constituting the first class, are the ship Belle, and brig Belvedere, from Savannah; the brigs Neptune's Barge, and South Carolina, and the schooner William and Joseph, from Charleston; and the schooner Pacification, from Jacquemel. Some of them arrived during the gale, and would have been permitted to proceed to the city immediately after their examination : others had been released from Quarantine, but they were prevented from getting under weigh by the violence of the storm. The crews and passengers of those vessels, consisting of sixty-four persons, were in perfect health during the passage, and when discharged from Quarantine. The cargoes were principally cotton, part of which was wet, but it was all sent to the usual places of deposite as fast as lighters could be procured to take it away. No sickness was occasioned by them or their cargoes, as many persons from the city who were employed to get those vessels off the shore enjoyed uninterrupted health.

The second class has been divided into those vessels which were driven alongside, or near to the United States wharf,

and those at the greatest distance from it; that the disease which occurred in the Sinclair family may be accounted for from another source than the infected vessels. In the first subdivision is the brig Andreas, from Marseilles, via Cape Haytien, with a cargo of wine. She arrived at Quarantine August the 15th, in nineteen days from the last-mentioned port. She had on board five passengers, all well; her crew, of ten persons, were shipped in Sweden, and were healthy during the voyage. On the 22d of August, her carpenter, who went to bed well, died in the night: the appearances on dissection clearly indicated that his death was occasioned by apoplexy. The same day one of his shipmates was taken sick with slight fever; and on the 27th of the same month two more of the crew were taken ill with fever of a suspicious character, accompanied with great tenderness of the abdomen, which was attributed to their provisions being cooked in copper utensils that had their tin coating worn off by long use. They all recovered, and two of them returned to the brig the 2d of September. After discharging part of her cargo which was not injured, she was got off, and hauled to the United States wharf, where she was unloaded and purified, but remained there until the last of September, when she was anchored again in the stream. While she was at the wharf, between the 14th and 26th of September, the captain and two seamen sickened with yellow fever, one of whom died, and two recovered. The sloop Spark arrived August 29th, in eighteen days from Havana, with a crew of five persons, and two Spanish gentlemen, passengers. They were in health when they arrived here, and when they left Quarantine. The former captain died at Havana, August 7th, and a seaman on the passage, August 13th, both of yellow fever. This vessel was sunk at the wharf, with all her cargo, consisting of sugar, which was totally lost; for it had been under water three days before any attempt was made to save it; and she remained under water until she was removed to Long-Island to be repaired. The brig Mentor arrived September 1st, in sixteen days passage from Matanzas, and was navigated by seven persons, who went from, and returned to,

New-York in her. They and the passengers enjoyed perfect health during the voyage, and were discharged from Quarantine the 6th of September. The place she sailed from was represented to be healthier than usual at that season of the year, but it was considered by us a sickly port. Her cargo of sugar, coffee, molasses, and fruit, was damaged, and sent to the city immediately and sold. The brig Nancy arrived August the 31st; she had twenty-eight days passage from Port-au-Prince, via Rum Key. At the latter place she was loaded with salt, which was all lost when she was driven on shore. The same crew, consisting of seven persons, sailed in her from Charleston, and went the voyage round. None of them had been sick since they shipped in her; and they were in health when discharged from Quarantine, September 5th. She had one passenger, who was also well. The brig Albert arrived September 2d, after twenty-seven days' passage from Point Petre, Guadaloupe. She was navigated by nine seamen, who sailed the voyage in her from Portland, without any of them being seriously indisposed; and during the forty days they remained at Point Petre, they did not hear of the death of any person belonging to the shipping in that port. This vessel was driven to the United States wharf, where her cargo of molasses, wine, and oil, was discharged in good order. She was soon after hauled into the stream, and her crew continued healthy. The schooner Native, after twenty days' passage from St. Thomas, arrived the same day as the brig Albert, and was driven to the wharf near to her, where her cargo of rum, wine, sugar, and hides, (which last article, being on top of the others, was quite dry,) was discharged into lighters, very little injured. She was removed to the south side of Staten-Island, about the 14th of September, to be repaired. Her crew consisted of eight men, six of whom went in her from New-York, and two were shipped at St. Thomas, where one of the original crew died of fever, after ten days' illness. The only passenger who came in her, was a gentleman who had resided many years in the West-Indies, and was recommended to come to the United States to obtain relief for a chronic affection of

his liver, of which disease he died the day of his arrival. No other person than the two above mentioned had been sick during the voyage, except a man with rheumatism. Three days after she was removed from Quarantine, one of her seamen was taken ill with yellow fever, September the 17th, and died on the 23d of the same month. Of those six vessels contained in the first subdivision, it appears, that the cargo of the brig Mentor is the only one materially damaged, (and it was sent away in lighters as soon as it could be discharged,) except that of the sloop Spark, which was under water three days. When the upper boxes of sugar were taken on the wharf, some of the contents, which had not been washed out by the water, ran out on the wharf and produced an unpleasant smell; but this could have no influence in producing the fever, as it had already commenced. The remaining two vessels, whose circumstances are to be described in the second subdivision, were 625 feet from the United States wharf, and at least 450 feet distant from those vessels mentioned in the first subdivision. The brig Andromache, the nearest of the two to the United States wharf, arrived the 26th of August, in twenty-one days from St. Thomas, navigated by eight persons, who sailed from, and returned to, New York in her. She had also one passenger on board. On her passage to this port one of her seamen died of fever, August the 10th, after nine days' illness; the captain and one sailor were sick with a similar disease at the same time, and recovered; all the other persons were healthy during the voyage. Six or seven men came from the city, and worked at this vessel, with three of the crew, for four weeks, during which time they occasionally slept on board, but not one of them was indisposed. Her cargo of rum, sugar, and indigo, was all discharged in lighters, while she remained in the stream, except eight hogsheads of sugar retained for ballast. This was damaged when she was driven on shore; previous to which event she had been ventilated, and partly white-washed. The brig Copernican arrived September 1st, after a passage of twenty days, from St. Jago de Cuba. She was navigated by

eight persons, who all went from New-York in her, and enjoyed perfect health during the voyage. All of them, except the mate and cook, were discharged from Quarantine about the 8th of September, at which time the mate's wife and child came from the city, and remained on board until the 28th of September. They and the labourers from the city, who were employed to get her off the shore, which was not effected until the 26th of the same month, were in health the whole time. Her cargo of sugar, which was half damaged, was carted to the steamboat wharf, and from thence sent to the city.

The particular circumstances and situation of all the vessels that could possibly have any agency in producing the pestilence at the Quarantine ground, the last season, have now been accurately detailed. In order to show that the contagion of yellow fever, from infected vessels, did not extend its baneful effects a great distance in the pure air of the country, and to offer an explanation of some facts, which occurred in the Sinclair family, it will next be necessary to give an account of the number and situation of dwellings that are near to the river, and are contained in the space of 1400 feet along the shore, where the above-mentioned vessels were stranded, to state their distance from the United States wharf, which may be considered as the centre around which the infected vessels lay, and to specify the distance of those dwellings from some particular vessels. Five dwelling houses and the hospital are contained within the above-mentioned limits, viz. Capt. Arnet's and Mr. Fountain's, situated on the north of the United States wharf, the first 280 feet, and the second 510 feet from that part of it which was occupied by the four ships from Havana; Capt. William Van Beuren's 290, the Health Officer's 570, Mr. Vanderbilt's 810, and the nearest part of the hospital 940 feet distant from the same wharf, on the south side. The brig Mentor was stranded 100 feet from Capt. Van Beuren's house. The distance from the place where the brig Andromache laid to Mr. Vanderbilt's house, is 225, to the Health Officer's 300, and to the hospital 350 feet. From the place where the brig Copernican was driven on shore, to

Mr. Vanderbilt's house, is 150, and to the hospital 275 feet. These vessels were nearer than any others to the buildings above mentioned. After the ship Ann-Maria was driven on the rocks, where she lay upwards of six weeks, she was only 250 feet from Mr. Fountain's house, but 630 feet from the United States wharf. All those buildings are 300 feet from each other, except Mr. Vanderbilt's house, which is 160 feet from the hospital. The land about them is under cultivation; in fact, it is a country place, and its healthiness has never been questioned. The shore is bold and rocky, the ground which gradually rises from it, lies open to the ocean, and is cooled by its summer breezes. There are within the Quarantine limits only two wharves, which are built of sound materials, and covered with wholesome earth. The only stagnant water and marshy land in this part of the island, are situated about two or three miles from the Lazaretto, and they are of very limited extent. But if they were much nearer, no injurious effect would result from them, as the only wind that would waft their miasmata to the hospital, is broken off by the intervening high land.

The foreign and local circumstances, that could have any influence in causing the fatal fever which prevailed at the Quarantine ground, having been fully detailed, I shall next attempt to trace the source of this disease, by its baneful operation on individuals. Although the particular change which this species of contagion produces in the atmosphere, like that from small-pox, measles, plague, &c. cannot be defined; nevertheless, we may avoid such sources of it as experience has proved to be dangerous, and not place our whole security in guarding against the foul air arising from animal and vegetable decomposition alone; for in manufactories where those putrid matters abound, and the stench occasioned by them is almost insupportable, the health of the workmen and the inhabitants in the vicinity, is infinitely less injured than we should expect to find it, from the powerful impression which such corrupt materials make on our senses.

A few persons were admitted into the Marine hospital, with

yellow fever, in the months of July and August, from vessels at Quarantine, lying in the stream ; but the first person taken sick with that disease, after a few vessels were hauled to the United States wharf, and subsequent to the gale, was Seth Waite, a lad seventeen years of age, who had performed the voyage in the ship Lucy-Ann, last from Havana. This vessel was much injured by the storm, and required repairs. This circumstance induced the Board of Health, on the sixth of September, (before the appearance of any malignant disease among the shipping which were stranded at Staten Island,) to grant permission for her removal to the ship yards, in the upper part of the city, as she had been previously purified. After this vessel left the Quarantine ground, and as she was proceeding to the city, this young man was taken ill, September 6th, and he died in the Lazaretto the 11th of the same month. A seaman died of yellow fever, August 13th, on board of this ship, and the mate, who was the last person taken sick, was convalescent and walking the deck the 20th of August, the day she arrived. This vessel, coming from an unhealthy port, having lost one of her crew with the yellow fever, and the mate having been sick with the same disease, on the passage, were sufficient to excite our suspicion that she was an infected vessel; although she had only stone ballast on board, from the time that she sailed from New-Orleans, until she arrived at this port, via Pensacola and Havana, and her hatches had been off the whole voyage. It has been remarked, that her ballast was all overhauled, and every part of the hold and forecastle was ventilated and white-washed ; between decks were scrubbed with an alkaline solution, and afterwards varnished. This was nine or ten days before Waite was taken ill. This young man was actively employed for several hours, in the afternoon and night of the 3d of September, during which time his clothes were drenched with rain. It was three days after this occurrence he was taken ill, which was eighteen days subsequent to any sickness on board of his vessel. Was this disease lurking in his system for two or three weeks? Could it have been caused by the violent motion of his

vessel, disengaging a greater quantity of foul air during the storm, or by the vitiated air from the ship Ann-Maria alone, or combining with that from his own vessel, soon after she was hauled alongside of the Ann-Maria, and thereby rendering the atmosphere about them more loaded with contagion than either vessel could alone produce? In answer to these queries it may be said, that the disease would have appeared immediately after his great fatigue and exposure in the gale, if it had been in his system eighteen or twenty days. If it arose from an increased quantity of infected air disengaged during the storm by the great motion of his vessel, it probably would not have commenced as early as the third day after the gale, for not one of the cases which occurred took place in less than five days after the first exposure to infected vessels. I am, therefore, of opinion, that this disease was caused by the contagion from the ship Ann-Maria, in addition to that of his own vessel, for his ship was hauled along side of her the 31st of August, and he had to pass over her deck to get to the wharf. Six days after this date he was taken ill, which period of five and six days will appear by the majority of the cases subsequently stated, to be the usual time that this disease commences after its contagion has been received into the system.

The Rev. Mr. Hardenbergh having engaged to officiate in the church near the Quarantine ground, on Sunday, September 2d, visited his friend, Captain William Van Beuren, the preceding Saturday afternoon, when he amused himself in fishing about two hours, on the United States wharf, near to the bows of the ships Ann-Maria and Lucy-Ann. The ship Le Herondelle's cargo was discharging at the same time on the opposite side of the wharf, and this vessel was about two hundred feet from Captain Van Beuren's house, where Mr. Hardenbergh slept that night. He returned to the city on Sunday afternoon. The next Friday, September 7th, six days after his exposure to the contagion of the above-named ships, he was taken sick, and died the 12th. If his disease was yellow fever, (which appears to be the general belief,) he without doubt received the infection while on or near to the United States wharf.

Jack Brittan, a coloured man, worked on the United States wharf, at the cargo of the ship L'Hirondelle and other vessels, from Monday, September 3d, before the gale commenced, to Saturday noon, the 8th, at which time he complained that he was unwell. He went home, and died the 14th of September. In this case the disease began in five days after he was first employed at the United States wharf.

Miss Sarah-Ann Van Beuren, aged 11 years, was on the United States wharf, Tuesday, September 4th, and near to the brig Mentor, which was driven on shore before her father's house. Five days after, she was taken sick, viz. Sunday, the 9th, and died the 13th of September.

John Hawthorn, who was on a visit to his father, at Staten-Island, was employed several hours on Tuesday, September 4th, in pumping out the ship Amphion, lying at the wharf. He was taken ill on Sunday morning, the 9th and died the 13th of September. Here we also observe the period of five days intervening between his going on board the Amphion, and the time he was taken sick.

Peter Andrews, a seaman who belonged to the ship Lucy-Ann, was taken ill the 9th of September, five days after his great fatigue in the storm which raged in the afternoon and night of the 3d, at which time he would be more predisposed than before to be infected with the contagious air which was probably discharged from its confinement, by the concussion of the vessel against the wharf and shore. He died the 14th of September.

Edward Wilson, John Young, and James Williams, with eight other men, were sent on board the ship Ann-Maria, Wednesday afternoon, September 5th. They were all engaged in discharging her ballast until Saturday afternoon, the 8th. On Monday, the 10th, they returned to Staten-Island for employment, but they were taken sick in the afternoon, and sheltered themselves in Captain Arnet's hay-loft, until the next day, when we were informed of their illness, and had them brought to the hospital; where the two first named men died,

September 13th, and the last on the 14th. In these three cases, we perceive the remarkable coincidence of those men becoming ill at the same time, and that in five days after they were first exposed to the contagious air of the ship Ann-Maria.

John Patterson first came to the Quarantine ground, for employment, the 5th or 6th of September, and worked on board of the brig Nancy, from Havana, and some other vessels. On the 11th of September he was taken sick, and died the 21st of that month. Here again we have the same period of five or six days after this man was first exposed to contagious air, before he was taken ill.

A girl, about thirteen years old, who carried refreshments to the dock builders, several times a day, while they were working on the United States wharf, was taken ill September 11th, and died September 16th. This is a period of seven days after the gale. But the wharf was so much injured by the storm, that the men discontinued their work, until a new contract was made to finish the work. It is probable, therefore, that this girl did not go there until a day or two after the storm.

Christopher Chergold, three or four days after the gale, went on board of several vessels that were stranded, and also on the United States wharf. Five or six days after he first went on board of those vessels, he became sick; he was put under mercurial treatment, and recovered.

Perry Roads, one of the dock builders, who was employed either three or four days after the storm, to discharge or work at the cargo of the ship L'Hirondelle, was taken sick the 12th of September, and died the 23d. In this case, we notice the same period of five or six days after he had been working, either on board, or alongside, of the ship L'Hirondelle. This man and John Patterson had apparently struggled through the disease, and they were considered convalescent from the sixth to the ninth days of their illness, as they were during this time free from fever, their appetite returned, and they slept well; but all these favourable symptoms were unexpectedly changed on the ninth day, when Patterson, who bled freely from the gums in

the early stage of the disease, had a more profuse discharge of blood from them, after it had been suspended for a day or two; he also evacuated from his stomach and bowels large quantities of dark blood, he became comatose at the same time, and continued so until he died. Perry Roads, on the ninth day, lost his relish for food, and although he took his drinks and medicines freely, still he became hourly weaker, and had no pulse at his wrist twenty-four hours before his death; yet his understanding was unimpaired to the last.

John White, Quarantine gate-keeper, was frequently on the public wharf in the performance of his duty; he slept one night on board of the brig Mentor, was taken sick the 13th, and died September 18th.

Another daughter of Capt. Van Beuren's, who attended on her sister particularly during the first part of her illness, was attacked with fever the 14th of September, five days after she first nursed her sister. This young lady recovered after a severe and tedious illness.

Capt. Slaight, who on the 6th of September was first employed in transporting the cargoes of vessels from the public wharf to Brooklyn, took in a second load on Saturday, the 8th, and slept that night on board of his lighter, which was lying at the United States wharf. He mentioned to his relations, when sick, that the last bale of cotton which he put on board his boat, was so offensive as to produce excessive vomiting, and he was impressed with the belief that he caught the fever from it. But I am of opinion, that the languor which consequently ensued after vomiting, and his apprehension of danger from the cotton, predisposed him to be infected by the contagious atmosphere, which, at that time, prevailed about the wharf, and in which he slept the same night. He was taken sick the 14th of September, in the morning, five days after he slept at the public wharf, and died on the 19th.

Capt. William Arnet, an Inspector of the Custom-house department, was informed, on Tuesday afternoon, September 11th, that three men were sick in his hay loft, near to his house:

as he was alarmed for the safety of his family, he went there to have them removed, and the same evening, at Dr. Harrison's, he expressed his apprehension that he might have taken the fever from those men; and he was impressed with the belief that he would get safely through the season, provided he should escape that exposure. Early the next day he removed his family to Elizabethtown, and on Sunday morning, September 16th, when there on a visit, he was taken sick. This was precisely five days after he was in the hay loft with the sick men, and he died the 20th of that month.

While the brig Andreas was lying at the United States wharf, her Captain, Andrew Ronning, and Michael Dolman, one of her seamen, were taken ill on the 17th of September; and James Watkins, a seaman who belonged to the schooner Native, then at the south side of Staten-Island, also sickened the same day. The first recovered, and the two last died on the 23d of September.

Francis Morgan and Peter Howard went to work on board of the ship Ann-Maria, the 12th of September, with sixteen other men, and continued there until the afternoon of the 18th, the same evening they began to complain. This was six days after they were first exposed to the contagion of this vessel: they both recovered.

Capt. Van Beuren was taken ill the 23d of September, and recovered. Magnus Landbour, a seaman who belonged to the brig Andreas, sickened on the 26th of September, and recovered.

Ephraim Tompkins, the last person who was taken sick with yellow fever at the Quarantine ground, went on board the ship Ann-Maria, with seven other men, on the 2d of October. He became ill on the 7th, five days after he was first employed in this vessel, and he died on the 11th.

It cannot escape observation, that all those persons whose cases have now been stated, were either on board or alongside of infected vessels, (except Captain Van Beuren's daughter, who was taken ill the day after her sister was buried,) and to

the contagion of those vessels their sickness must be attributed. But what is equally worthy of notice, and not less important, is the remarkable circumstance, that twelve of those twenty-five persons were taken sick on the fifth and sixth days after they were first exposed to infected vessels, viz: The Rev. Mr. Hardenbergh, Jack Brittan, Miss Sarah-Ann Van Beuren, John Hawthorn, Edward Wilson, John Young, James Williams, John Patterson, Christopher Chergold, Francis Morgan, and Peter Howard. From this important fact, we have been led to fix on the time when, and to offer our reasons why, this disease occurred at the precise period of five and six days, in seven more of the twenty-five cases, viz: Seth Waite, Peter Andrews, the girl who attended on the dock builders, Perry Roads, Miss Mary Van Beuren, Capt. Slaight, and Capt. Arnet, who, although they had been longer than six days exposed to an infected atmosphere, nevertheless escaped the disease until they were exposed to a more concentrated contagion, or they had, at such special exposure, a greater predisposition to take the fever than previously existed in their systems. The remaining six persons, viz: John White, gate-keeper, was taken ill twenty days after the infected vessels were brought to the wharf, and nine days after the brig Mentor was driven on shore, very near to the place where he was stationed to keep the gate; but when he slept on board the brig Mentor cannot be ascertained. Capt. Ronning, Michael Dolman, and James Watkins, sickened thirteen days after their vessels were driven to the wharf. Magnus Landbour was taken ill twenty-two days after the same period: and Capt. Van Beuren, one month after the infected vessels were hauled to the United States wharf, and nineteen days after the gale. If the inquiry had been made, it is probable that some special circumstances might have been discovered in each of these six cases, five or six days previous to their illness, as occurred in the seven cases before stated. But our attention was not drawn to the fact, that so many of those persons who had the yellow fever, were taken sick at this particular period after their exposure to the cause of it, until the pestilence had

ceased, and they were discharged, or had died. It may be well to remark, that Capt. Van Beuren removed with his family on Saturday, September the 15th, from the Quarantine ground to a place where he was breathing a pure atmosphere. This would make him more liable to take the disease when he opened the stores on Monday following, as the infected air in them would probably be rendered more malignant by their being shut on Saturday. He was taken sick six days after he opened the stores, and subsequent to his removal from his own house.

The Sinclair family, who remain to be noticed, have not been enumerated in the order they sickened, with the other persons who had the yellow fever, because all those persons had been previously exposed to infected vessels; and although Captain William Arnet and Miss Mary Van Beuren appear to have derived their disease from personal contagion, yet the evidence may not be considered conclusive. It has been stated, that the Sinclairs resided in the north basement story of the hospital, 940 feet from the United States wharf, and 275 feet from the brig Copernican, the nearest vessel to their abode. She was from St. Jago de Cuba, and her crew had been healthy the whole voyage. After she was driven on shore, the mate's wife and child lived on board, with impunity, twenty days, during which time the damaged cargo was discharged. Mr. Vanderbilt's family, consisting of ten persons, lived 125 feet nearer to this vessel than the Sinclairs did, and the same wind that would blow the foul air of this vessel upon the dwelling of the latter, would also carry it to the former; nevertheless, Mr. Vanderbilt's family all enjoyed good health. The brig Andromache was also 125 feet nearer to Vanderbilt's, and 50 feet nearer to my residence, than to Sinclair's. Hence, it may be inferred, that they did not take the disease from those two vessels, or all those persons from the city who resided on board, and the two families before mentioned, whose members were more than three times as numerous as the Sinclair family, could not have escaped the disease. As we do not know how far contagious air may be conveyed by a current of wind,

and produce its deleterious effects, it may be contended, that the Sinclairs derived their sickness from the infected air of other vessels, although at a greater distance from their residence than those two brigs. I would reply, that no other vessels suspected to be infected, but the two brigs, were nearer to their residence than 750 feet, and as four out of six families whose houses are within the limits before described, lived twice as near to those vessels as the Sinclairs, and continued healthy, with the exception of Capt. Arnet, their disease cannot be traced to that source. In further corroboration of the inference that the Sinclairs did not derive their disease from the stranded vessels, and as a proof that the contagious air on board of vessels is not communicated 250 feet in a pure air, aided by a favourable current of wind, the following fact concerning the ship Ann-Maria may be adduced. This vessel was indisputably an infected one, for the men who worked on board of her and were taken sick, could not have derived their disease from any other source, as she lay 630 feet from any other vessel, and the same distance from the United States wharf. Now this vessel remained six weeks only 250 feet from Mr. Fountain's house, during which time the wind frequently blew in a direction from her towards his house, yet none of his numerous family or boarders were taken sick. It is reasonable to suppose, therefore, that if the Sinclairs remained at home, they did not receive the disease from any vessel, as the stranded vessel nearest to their residence, (and she was not an infected one,) lay 25 feet farther off from it than the ship Ann-Maria lay from Mr. Fountain's. Both of Sinclair's daughters assured me, that they had not been nearer to the United States wharf, or to any of the vessels, than their dwelling, for some weeks before the gale; and they and their father informed me, that Mrs. S. never was nearer to any of the vessels than her residence, except in going to and from the Health Officer's house twice, she passed as near as 100 feet to the brigs Copernican and Andromache, and about 300 feet from the other suspected vessels. James Sinclair, health office boatman, had been on the United States wharf, and among the infected

vessels, but not after the 11th of September, and from that time until he was taken sick, he was not more exposed to the infection of yellow fever than he had been every season before, for nineteen years past; and as he was not taken sick before the 28th of that month, it is probable that he received the cause of his disease from another source.

Having fully examined into the situation of all vessels which could have any influence in causing the sickness which prevailed in the Sinclair family, and finding none to which we can ascribe it, we shall now endeavour to account for their disease from personal contagion and foul clothing. Mr. and Mrs. S. visited Hawthorn during the latter part of his illness; and the 13th of September they and their daughters were at his house making arrangements for his funeral. Mrs. S. did not visit any other person who had yellow fever, besides Hawthorn; but on Monday, the 17th of September, she received the bedding and clothing of Wilson, Williams, Young, and Waite, who died of yellow fever on the 11th, 13th, and 14th of the same month, some of which, particularly Waite's, were so filthy, that she directed her daughters to go out of the wash-house, while she carried the clothing through it to the yard, where she put them into cold water. On the 22d, early in the morning, five days after she had this foul clothing in her arms, she was taken sick, and died on the 26th of September. Her daughter Jane, from the commencement of her mother's illness, so frequently laid her head on her mother's bed and kissed her, that her father twice took her away, as he was apprehensive that she might contract her mother's disease. She was taken sick, September 27th, five days after her mother first sickened, and she died October the 4th, with black vomit, previous to which time she had been three days under a free salivation. James Sinclair was in bed with his wife when her fever commenced, and he was taken sick the 28th of September, six days after he was exposed to her contagious fever. He died the 3d of October. Sally Sinclair slept with her sister the same night that Jane was taken ill, and five days afterwards, on the 2d of October, she was taken sick,

but recovered. Could those four persons have received the infection from one and the same source, viz. from Hawthorn? I am of opinion that they did not take the disease from him, and the daughters did not go there until his death. They sickened at very different periods, after they were at Hawthorn's; but if they had caught their fever from him, we should expect that some, if not all of them, would have been taken ill in five or six days after being at his house, and within a few hours of each other, as occurred in the cases of Wilson, Young, and Williams, who went on board the ship Ann-Maria together, and sickened in an hour or two of each other. The same circumstance happened in the cases of Morgan and Howard. But Mrs. S. was not taken sick until the lapse of eleven days, and the daughter who last sickened, not until twenty-one days after they visited Hawthorn. These reasons are conclusive, in my opinion, that the Sinclairs did not contract their malignant fever at Hawthorn's; but, that Mrs. S. caught her's from the foul clothing she had in arms, her husband and daughter from her, and Sally S. from her sister Jane. The three last were not exposed to the infected clothing, consequently they must have taken the fever from personal contagion. I am led to this conclusion from the important fact, that three of them became ill in five, and the other in six days after being exposed to the special exciting causes before related; for their becoming sick at that particular period cannot be considered as the effect of mere accident, otherwise it would not have occurred in nineteen persons out of twenty-five, who derived their disease from the infected vessels at the Quarantine ground.

From the foregoing faithful and minute statement of facts appertaining to, and connected with, the fatal fever which prevailed at the Quarantine ground last fall, are drawn:

First, *That the yellow fever was not generated from local causes, inasmuch as that part of Staten-Island where the Lazaretto is situated, is as healthy as any place in the United States, and the contagion of that disease never before prevailed among the inhabitants.* No local impurities having existed there that could ge-

nerate a malignant fever, some persons might attribute the pestilence to the cargoes which were damaged in the memorable September gale : but as those cargoes were so recently injured, and would have been totally lost if retained only a short time at Quarantine, they were permitted to be taken away before they were in such a state as to generate foul air ; and as a proof that the fever was not produced from this cause, I refer to the circumstances of particular vessels herein stated, from which it will appear that those vessels whose cargoes were most injured, were not rendered more unhealthy in consequence of such injury. On the contrary, those vessels which arrived in stone ballast, with their hatches off all the passage, from very sickly ports, as Havana, were the most fatal to the persons who remained on board.

Many vessels were driven so far ashore, that at low tide they were entirely out of water, and they were but partially in it at high water. Some days after the gale, the worms and shell-fish that adhered to their bottoms, died and became putrid, which rendered those vessels offensive, and to this cause, perhaps, some may attribute the fever. Those small worms being imbedded in the water-soaked bottoms of vessels in their natural situation, and the shell-fish adhering by suction, would not die in less than four or five days, while undisturbed in their nidus or attachments ; and admitting that they became putrid immediately after their death, still a few days must necessarily elapse, before any injurious effects would ensue from them. Therefore, a malignant fever, from this cause, could not take place in less than ten or twelve days after the vessels were driven on shore; but the yellow fever had actually commenced in six cases, seven and eight days before this period, and even before the offensive smell from those vessels was noticed. That the fever did not arise from that cause, is further confirmed by the fact, that in those places where the air was rendered most impure from those insects, no person was taken sick, except Mr. James Ward, who had remittent fever. While at the United States wharf, where the principal cause of the pestilence existed, none of the vessels which lay at or near to that wharf, were in the least offensive, from putrid worms, or shell-fish, as the tide never left them dry.

It is evident, that the yellow fever was an imported disease, which existed in those vessels at the wharf previous to the gale, but was no doubt greatly increased by it, as it brought many more infected vessels near to the wharf, and consequently augmented the quantity of infected air at that place.

Secondly. *I am of opinion, that the yellow fever is contagious, in the same manner as jail, hospital, and ship fever, and is communicated from one person to another, through the medium of the atmosphere, tainted with the specific matter of this disease, and particularly in the impure atmosphere which exists in low, confined, and crowded parts of cities, during the warm months of the year.* From its contagious character alone can the sickness which took place in the Sinclair family, be satisfactorily accounted for: as they had not been exposed to any other source of disease than personal contagion, (and foul clothing in the case of Mrs. S. only.)* That part of the family who escaped the fever, were two adults and two children, and they lived and slept in a building 80 feet from the hospital, near to the wash-house: they were often in the rooms with their sick relatives for a short time. From this circumstance, as well as many similar ones, it would appear that a continued exposure of some hours to the air of an infected room, or a very near approach to the sick, and repeatedly inhaling their contagious exhalations, in addition to a predisposition, is generally essential to contract an infectious fever. It is observed that few or none of those persons who respire infected air for a few minutes are endangered by it. This circumstance will explain why so many persons escaped the disease, whose curiosity led them to

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* When clothing is tainted with the specific matter of small-pox or measles, those diseases will be communicated by such fomes, and they are admitted to be propagated by contagion, when taken in this manner, because the specific matter is not so altered as to produce any other disease. Now, Mrs. Sinclair, having had the same disease, (viz. yellow fever,) as Waite, and others, whose clothing she washed, it must be allowed, on the same principle, that her disease was also produced by the specific contagion of yellow fever.

Staten-Island to view the wrecks of the great number of vessels driven on shore at and near to the Quarantine ground. That the constitution frequently adapts itself to a contagious atmosphere, and resists its influence, the memorable fact which occurred in the year 1819, will clearly illustrate. At that time nearly two hundred inhabitants, who had been living a fortnight in the infected district of Old Slip, were furnished with accommodations at Fort Richmond, on Staten-Island. After their removal, eight or ten persons only were taken sick with yellow fever. Now, as non-contagionists admit that the yellow fever is taken in such an infected atmosphere, can the escape of so large a proportion as one in twenty be accounted for on the principle of infection? With what propriety, then, can they deny its contagious character, merely on account of its being but seldom communicated from one person to another in clean and well ventilated apartments, and especially as fevers, acknowledged by themselves to be infectious, are not more frequently contracted than yellow fever, where similar precautions are used? Surely we have much greater reason to ask them to show how any person can escape the infection, after having lived in it a fortnight, than they have to doubt the contagious character of the same disease, because so many escape the contagion from the sick, whose apartments can very seldom be contaminated, where due attention has been paid to cleanliness and ventilation. This objection against the contagious character of yellow fever, proves too much, and must therefore be rejected, for it also proves that it is not even an infectious disease.

Because the yellow fever is not as contagious as small-pox, measles, or plague, is it therefore to be considered as non-contagious? Are those diseases equally contagious? Is each of them equally contagious at all times, and at all seasons of the year? Are they uniformly as malignant or fatal every time they occur? Facts give a ready answer to these questions, that there is a wide difference among them, not only in the degree of their contagious property, but even in the active contagious character of each disease at different times and seasons of the year. What

is the standard to which we must appeal to know when a disease is to be termed contagious or non-contagious? There is so great a variation in this respect, among those diseases admitted to be contagious, and the same disease at different times, that there does not appear to be any definite rule laid down to govern us. The best practical one would be to consider those diseases as certainly contagious or infectious, which are capable of producing a similar disease, whether it is communicated to every person who may be exposed to the contagion, or only to one person in a hundred. When a disease, on this principle, is generally admitted to be contagious or infectious, by carefully observing the circumstances in which it is more or less frequently communicated, we shall in time be enabled to judge to what degree it is so, to know the risk incurred by exposure to it, to take suitable measures for its extinguishment, and provide comfortably for the sick, with the least hazard to their friends and attendants.

Thirdly. *I am of opinion that the yellow fever is produced from a specific contagion; for the twenty-nine persons, who sickened in consequence of their intercourse with the Quarantine ground, all contracted the same disease*, twenty-one of whom died, and fourteen of that number had that fatal symptom, black vomit. If this disease is only a higher grade of bilious fever, and is not produced by a specific contagion, but from marsh miasmata, or animal and vegetable putrefaction, as inculcated by our professional opponents on this subject, would not some of the diseases which ensue from those causes, such as bilious remittents, remittents, and intermittents, have also appeared at Staten-Island, from the same cause which occasioned the yellow fever? No idiopathic febrile complaint existed among the inhabitants, in the neighbourhood of the Quarantine ground, previous to the gale.* If, therefore, it is a fact that yellow and bilious fevers originate from one and the same cause, a fairer test

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* One or two cases of remittent, and not one of bilious, fever occurred within a mile of the Quarantine ground, the whole season.

could not be conceived to show their identity, than what actually existed at that time at Staten-Island. If either of those diseases had prevailed there before the gale, followed by the other soon after it, doubts might have arisen, whether both fevers were not derived from the same origin. For instance, if bilious fever had prevailed at Staten-Island, before the 3d of September, and the yellow fever had ensued immediately after the gale, (as actually happened,) and attacked some of the inhabitants who had been previously exposed to the miasmata which gave origin to bilious fever, but who had also been exposed to the contagion of yellow fever, by going on the United States wharf, or on board of infected vessels, our medical opponents would not have allowed that the disease was derived from the infected place or vessels, but attribute it to the same source which gave rise to the prevailing bilious fever, and consider such a case as a proof of the identity of the cause of both diseases, and call it a higher grade of bilious fever. But we, who believe that they are different diseases, and originate from different sources, would have ascribed such an occurrence to the infected vessels, and not to the local causes which had previously existed, and had produced bilious fever. On the other hand, if the yellow fever had been imported to Staten-Island, and prevailed there before the gale, and it had so happened that very shortly after it, the inhabitants who resided near to the Quarantine ground were attacked with bilious fever, although arising from an evident local cause, nevertheless, the medical gentlemen from whom we differ on this subject, might consider such an occurrence as an evidence that the disease arose from the infected vessels driven on shore in the gale, and as both yellow and bilious fever would prevail there at the same time, they would be considered as one and the same disease. But the facts now before us furnish no pretence to either party for cavilling. As we find no febrile disease prevailing at Staten-Island before the gale, we also perceive that the yellow fever was the only one which took place after it. As bilious fevers are changed into common remittents and intermittents, ought we not to meet with yellow fever changing into

those diseases also, if it is only a higher grade of bilious fever? We further observe that bilious remittents, after becoming intermittents, are again converted into bilious remittents, and prove fatal. Does the same principle of transmutability obtain in yellow fever? If it does, I have never been favoured with a view of such transmutation. If the dormant poison, lurking in the system of a person who has bilious fever, can be converted into yellow fever, and if such change depends upon the additional causes of bad air, neglect of cleanliness, want of attendance, and of suitable remedies, then I know of no place more likely to accomplish this than the confined forecastles of coasting vessels. Many persons with bilious fever are annually received into the Lazaretto, under the above circumstances; yet I have never met with yellow fever cases, in such vessels, during sixteen years residence at the Marine Hospital, on Staten-Island, except when it had previously prevailed at some southern port.* Although bilious fever has been nearly as fatal, some seasons, as yellow fever usually is, yet I have never seen it terminate in the black vomit, properly so called.

Hard or black frost has been long observed to destroy the contagion of yellow fever, but not to put an end to bilious fever. Can this difference be accounted for, on the principle that the former is only a higher grade of the latter? Is it usual for an agent that removes the greater effect of any cause, not to put as

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* It is very seldom that cases of yellow fever are brought from our southern ports; for as soon as the disease spreads there to any extent, business is so much depressed in those towns, that the intercourse between them and other places becomes very limited. Not one case was received from Savannah at the Lazaretto, in the year 1820, when it proved so fatal at that city. But from the 17th of August, about which time the malignant fever began at Savannah, to the 16th of October, only ten vessels arrived here from that port, and they were less sickly than vessels coming from that place usually are at that season, in years when Savannah is considered to be healthy. This singular exemption from disease was attributed to the seamen remaining on board of their vessels, which lay at a distance from that part of the city where the fever prevailed, and to the shortness of the time that those vessels remained in that port.

effectual a stop to a lesser degree of the same cause? Such an occurrence is contrary to the common course of events, and requires a reasonable explanation, before we can consider those fevers to be one and the same disease. The contagion of yellow fever has been dissipated even in warm weather, when the foreign source has been extinguished either by purification or removal; and the inhabitants of such district have returned to their houses with impunity during warm weather, after the purification was accomplished. Since experience has taught us that this fatal malady can be arrested in populous places by deserting the infected spot, its ravages have become limited. If the same measures had been pursued in this city in the years 1795 and 1798, and 1803 and 1805, as in the year 1819, it is probable that an equally favourable result would have ensued. On the principle of contagion, this great difference between the number who had this disease in the former and latter periods, may receive a satisfactory explanation. The inhabitants remaining in an infected district, would daily become sick, and contaminate the atmosphere with its specific contagion. This would produce the fever in others, and hence its sphere of action would be constantly extending its limits far beyond its original bounds. If the yellow fever was of local origin, and non-contagious, could its limits be extended by the inhabitants remaining and falling victims to it; and would it be arrested in its bounds by the removal of the same inhabitants? A mere local cause, producing a non-contagious disease, could not affect the inhabitants residing beyond the limits of its operation; and whether the inhabitants of such infected district remained or removed from it, they could not have the least agency in extending it. But in the instances above referred to, the yellow fever, beginning at a point, daily extended its baneful influence, when the inhabitants only partially removed, until upwards of two thousand fell victims to it, in the year 1798: while in the year 1819, by the timely removal of the inhabitants, only about sixty persons died, and it did not extend beyond the originally defined limits.

Fourthly. ***Yellow fever, like most of the specifically contagious diseases, makes its appearance in a fixed period, after the contagion is received into the system.*** By reviewing the twenty-nine cases herein enumerated, we are furnished with too many facts where this disease has been taken, after a given period, to suppose that it could be the result of mere accident; but it must be considered as one of the attributes of this disease, and a strong presumptive evidence of its specific character. Ten cases of the twenty-nine sickened on the fifth and sixth days after their first exposure to the contagion, and eleven more were taken ill at the same period of time, after they were placed in situations more immediately under the influence of its contagion than they previously had been, as particularly described in each case. To this number may be added the only two persons who contracted this fever the last summer, by shipping on board of infected vessels at Quarantine, one on the fifth, the other on the sixth day after they embarked. The youngest son of Mr. Daniel Van Duzer was also seized with this disease, the sixth day after his brother was taken sick, and is another instance of personal contagion taking place in the pure air of the country.* These twenty-six cases make more than five-sixths of the whole number who were taken ill with yellow fever, at Staten-Island, the last season.

It appears from the occurrences of the last season, as well as of former seasons, that the contagion of yellow fever may lie dormant in vessels for a long time, and not be brought into active operation, until elicited by a continued warm and congenial temperature, or some violent concussion of the vessel.

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* Mr. Daniel Van Duzer resides near half a mile from the Lazaretto. His eldest son, who was master of a lighter, was taken sick with yellow fever, the 14th, and died the 18th of August. He, no doubt, contracted his disease while lying alongside of infected vessels, and receiving their cargoes. His youngest brother, who was frequently about his bed, during his illness, was taken with the same disease, on the 19th of August, which was about three weeks before the disease prevailed at the Quarantine ground; and as he had not been near to any infected vessels, his disease cannot be accounted for in any other manner than by personal contagion.

I have thus endeavored to furnish a faithful narration of facts, as they have occurred at the Quarantine ground, and have offered some observations which appeared to me to have an immediate bearing on this important subject. The practical inference to be drawn from them, is, that rigid Quarantine regulations are essentially necessary to guard the inhabitants of our commercial cities against the introduction of pestilential diseases.

New-York, February, 1822.

ART. III. STRICTURES *on the late Circular addressed to the Citizens of the United States by* JAMES SMITH, M. D. Agent of the Vaccine Institution, at Baltimore: communicated in a Letter to the Editors, by HENRY W. DUCACHET, M. D. of New-York.

March 9th, 1822.

GENTLEMEN,

THE experience of twenty-four years* has verified the efficacy of vaccination as a prophylactic against the small-pox. Notwithstanding the obstacles which every discovery must encounter in the ignorance, the prejudices, and the interests of

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* I say twenty-four years, calculating from the time that Dr. Jenner promulgated his discovery. Without wishing to detract from the merit of this excellent man, I think there is some reason to believe that the kine-pock inoculation was known and practised before his time. The following extract from the last report of the Royal Jennerian Society, would seem to show that it was familiar to the ancient Hindoos.

"We derive the following from the *Madras Courier* of the 12th January. It is the conclusion of a letter, of which the former part contains a learned exposition of the *spasmodic cholera*, collected from works in general use among Hindoo medical practitioners, with the formulas of the medicines prescribed. The subject incidentally introduced merits all the prominence which it will receive by being detached.

"'As my examination of the Vaidya Sástras has been casual, and may never be repeated, I shall here notice a fact, which will add another to the many proofs of the truth of the wise man's adage, that 'there is nothing new under the sun:' it is, that the inoculation for the cow-pox was known of old time to the Hindu medical writers. To substantiate this

men; notwithstanding the determined opposition which it was, in a remarkable degree, the fate of vaccination to endure; the fact, that the vaccine disease is a preservative from the small-pox, commands the faith of the whole world, and is received as

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statement, it is necessary only to refer to the *Sactéya Grantham*, attributed to Dhanwantari, and therefore undoubtedly an ancient composition. In this work, after describing nine several species of the small-pox, of which three (one, Alábhi, being the confluent kind) are declared incurable, the author proceeds to lay down the rules for the practice of inoculation. From this part the following extracts are taken:

"'TRANSLATION.

"'Take the fluid of the pock on the udder of a cow, or on the arm between the shoulder and elbow of a human subject, on the point of a lancet, and lance with it the arms between the shoulders and elbow until the blood appears; then mixing the fluid with the blood, the fever of the small-pox will be produced.

"'The small-pox produced by the fluid from the udder of a cow (Góstany' odacum) will be of the same gentle nature as the original disease, not attended by fear, not requiring medicine; the diet may be according to the pleasure of the patient, who may be inoculated once only, or two, three, four, five, or six times. The pock, when perfect, should be of a good colour, filled with a clear liquid, and surrounded by a circle of red; there will then be no fear of the small-pox as long as life endures. When inoculated with the fluid from the udder of a cow, some will have a slight fever for one day, two, or three days, and with the fever there will sometimes be a slight cold fit; the fever will also be attended by a round swelling in the armpits, and the other symptoms of the small-pox, but all of a very mild nature. There will be no danger, and the whole will disappear in three days.

"'CALVI VIRUMBON.'"

"'*Madras, Jan.* 2, 1819.'"

However faithful this extract from the Shastra, and however ancient this book may be, it is well known that the Bramins resisted the introduction of vaccination into India, with the most malignant pertinacity; and that they propagated the most wicked rumours against the British surgeons who recommended and practised the operation. It was only by *bribing* the Indian inoculators, that they could be persuaded to use the vaccine virus. If vaccination was ever known among them, the knowledge of it had probably been lost.

The following extract I find in my common-place book; but having inadvertently omitted to note the book from which I took it, I cannot state

one of those unquestioned truths, upon which a doubt cannot reasonably be entertained. When we consider the importance of confirming and maintaining this happy confidence in vaccination, and calculate the inestimable blessings it has conferred upon the world,* it is painful to witness an occurrence which may tend, in the least degree, to impair this confidence. How much is it to be regretted, then, that a public officer, commissioned to preserve and perpetuate this invaluable prophylactic, and in whom we had a right to expect a constant and zealous defender, should, for the inexcusable purpose of justifying an unfortunate mistake, have addressed an imprudent circular to the public, calculated directly to subvert their faith in the virtues of vaccination! It seems that in November last, Dr. James Smith, the Superintendant of the General Vaccine Institution, at Baltimore, transmitted to Dr. Ward, of Tarborough, North Carolina, a

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the authority upon which it rests. "In the year 1769, kine-pox was described (in a weekly paper, Allgemaine Unterhalturgen, published at Göttingen,) as a well known disease 'here in this country (Germany) which infects persons who attend the dairies and prevents the infection of small-pox.' Dr. Jenner published his 'Inquiry into the causes and effects of Variola Vaccina,' &c. in 1798, twenty-nine years later."

* Every body has heard and read of the dreadful ravages of the small-pox, at various periods, since its appearance in the world. But few have a true idea of the advantages of vaccination; and many are inclined to ascribe the less frequent appearance of small-pox, of late years, in a great degree, to the practice of *variolous inoculation*. The fact is, however, that the old inoculation for small-pox, although it mitigated the violence of the disease, in individual cases, actually increased the mortality from this plague. Dr. Heberden has shown, by accurate calculation, that after the introduction of the inoculating process into London, ninety-five deaths out of a thousand, were caused by small-pox; whereas before, the average was only *seventy*. What a miserable expedient inoculation was for the extermination of the small-pox, may be determined from the fact that this disease continued *annually* to destroy no less than *fifty thousand* of the inhabitants of Great Britain! For further evidence on this point, see Walker's Inquiry into the Small-pox, p. 452. Baron Dimsdale's Thoughts on general and partial Inoculation, p. 23. note. Lettsom's Medical Memoirs, &c. p. 164. Moore's History, &c. of Vaccination, p. 134. But vaccination is never fatal.

parcel containing the matter of small-pox, instead of the vaccine infection. The consequence was, that this dreadful scourge was extensively introduced among the unsuspecting inhabitants of that village, and committed dismaying ravages in the surrounding country, before the proper remedy could be procured to arrest it. To escape the odium which such an occurrence necessarily brought upon him, Dr. Smith, with an imprudence wholly inexcusable and unaccountable, except upon the charitable supposition of his being overwhelmed by the consternation of the moment, addresses a circular to the people of the United States, in which he attempts to account for the accident in a manner which goes directly to subvert all confidence in the prophylactic virtue of the vaccine virus.

I beg leave to offer to you a few strictures upon the doctrines and principles maintained in this singular communication, and to solicit for them a place in your contemplated journal.

To account for the introduction of the small-pox into Tarborough, he has recourse to the following positions:

"1st. I have been unavoidably engaged in attending to persons diseased of the small-pox here. I daily visit, handle, and administer medicine to them; and although I have always taken every precaution that I knew was necessary to prevent this contagion adhering to my person, still it is possible that such an accident may have occurred.

"2d. The genuine kine-pock is in itself so nearly allied to the small-pox, that when this plague becomes epidemic in any place, it intermixes with the vaccine matter by a natural and unavoidable process, and in a manner that may possibly elude the utmost care and vigilance of any person to prevent it.

"3d. The same persons or subjects from whom the vaccine matter must be taken, (for it cannot be otherwise procured than from persons who are fit subjects for it,) may be the bearers of the genuine kine-pock and of the true small-pox at the same time.

"4th. The same identical kine-pock vesicle, under such circumstances as we are now unhappily involved in, that will one

day furnish the most pure and genuine vaccine matter, is susceptible of a change in its natural properties, and within a few days afterwards will furnish a different matter, capable of generating the most destructive small-pox."

"1*st.* *I have been unavoidably engaged in attending to persons diseased of the small-pox here. I daily visit, handle, and administer medicine to them; and although I have always taken every precaution that I knew was necessary to prevent this contagion adhering to my person, still it is possible that such an accident may have occurred.*"

It is really surprising that the Vaccine Agent should have thought to palliate his conduct by a confession, which, on *his* principles, must forever condemn him. I really cannot perceive how he finds an excuse for transmitting the small-pox to North Carolina, in the acknowledgment that he had placed himself in circumstances which rendered such an accident *possible*. If he really believed it possible for the contagion adhering to his person during his attendance upon patients diseased of small-pox, to be communicated to others by letter, and even to infect the vaccine virus transmitted by post, how can he reconcile it to his professional obligations, to his duty as a public agent for supplying the country with the vaccine virus, or to his conscience as a man, to expose himself by visiting, handling, and administering to any such? To say that he was "*unavoidably engaged*" in such attendance, is no apology. No circumstances can require or justify an exposure, which paramount duty should have taught him to avoid. But I am really at a loss to conceive how the variolous contagion, adhering to the Doctor's person, could have affected the vaccine virus, transmitted to Tarborough. I have never before seen it intimated that the matter of small-pox could infect an inanimate, inorganic substance, so as to convert it into its own nature; and have always considered it as a received fact, that the animal poisons are the exclusive product of animal secretion.

"2*d.* *The genuine kine-pock is in itself so nearly allied to the small-pox, that when this plague becomes epidemic in any place,*

it intermixes with the vaccine matter by a natural and unavoidable process, and in a manner that may possibly elude the utmost care and vigilance of any person to prevent it."

I am at a loss to conjecture what is meant by this alleged *alliance* between the vaccine disease and the small-pox. I presume, however, that the fair interpretation is, that they are *varieties* of the same poison. If this is the Doctor's meaning, it is no difficult matter to refute the assertion; for, independently of the clearly marked differences in their external appearances, and the entirely dissimilar train of phenomena which they exhibit in their course, that they are distinct affections is evident from the small-pox being peculiar to the human subject, and wholly incommunicable to the bodies of any other species of animals; whereas it is far otherwise with the vaccine infection. And perhaps it would not be a very easy matter for the Doctor to adduce a single case in which inoculation with the vaccine lymph has ever produced small-pox; (except in Tarborough!) or the inoculation for small-pox has ever eventuated in the eruption of a vaccine vesicle. It is a well-known fact, too, that the true vaccine disease may be produced in a person who has been the subject of small-pox. Now, where is there an analogy to justify the supposition, that a disease which, after being once contracted, destroys the susceptibility of the body to a second attack, may yet appear in another variety at a subsequent period?

As it regards the assertion, that when small-pox "becomes epidemic in any place, it *intermixes* with the vaccine matter by a natural and unavoidable process,"—it is directly at variance with universal observation. If the fact were thus, why are institutions established for the extension of vaccination? why is so much anxiety felt by the guardians of the public safety, that every individual in the community should undergo this process? why are disabilities imposed in some countries,* upon persons

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* In France the principals of schools are forbidden, under heavy penalties, to receive scholars who are unprotected from the small-pox. In Holland the schools are shut to all who cannot produce a certificate that they have either had the small-pox, or have been vaccinated. No assistance

who have not been vaccinated? and why are laws enacted to enforce submission ?* It is evident that if this were the fact, the small-pox could never be exterminated, or even arrested. An epidemic small-pox would commit the same destructive ravages now as formerly, before the discovery of the preservative virtue of the vaccine disease. In vain would Dr. Smith invite the citizens of North Carolina to apply to him for the vaccine infection to arrest the progress of the desolating plague !—All his philanthropic efforts would be in vain—nay, worse than useless, since every vaccinated person must be in danger of having this affection transformed into the loathsome disease against which it was intended to secure him, and must thus become a new focus of variolous contagion. It is not necessary to enter farther into a refutation of this singular proposition. Indeed, it is so obviously untrue, as not to deserve serious notice, unless to undeceive those who have been misled by it. Yet as Dr. Smith is very fond of referring to the ravages which the small-pox made in this city in the years 1815 and 1816,† it may not be impro-

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is given to the poor whose children have not undergone this process. And no person is allowed to be married, unless he can produce a physician's certificate of his being unsusceptible of the contagion of small-pox.

* In most European countries it is highly penal to inoculate for small-pox; and in England it is an indictable offence, even to cause a person labouring under small-pox, to pass through the streets. See the case of THE KING versus TAUNTON, in the London Medical Journal.

† In a pamphlet entitled, "Two letters relative to the Vaccine Institution, addressed to the members of the Hon. the General Assembly of Maryland," &c. Dr. Smith makes the following unfounded and ungenerous attack upon the citizens and faculty of New-York. "What a heavenly opportunity existed, at the commencement of this plague, to have put the monster to death in the city of New-York, and to have saved our country from the incalculable injuries which we have sustained! The kine-pock, in the hands of any one attentive citizen who would at that time have made a proper use of it, might have saved the lives of all those who have since been swept off in our view by the small-pox, and who are now lost forever to their country and to their friends. But there was *no individual or society* possessed of a just sense of the approaching danger, to give the alarm. Ostentatious philanthropy was asleep, and there was no one to throw 'a

per to adduce a few facts from that very epidemic, to nullify the assertion that, in a pestilential season, small-pox unavoidably intermixes with the vaccine disease, and converts it into its own nature. During that epidemic, I myself vaccinated in one day ninety persons, at the City Dispensary; and for seven weeks a physician was constantly employed in performing the operation upon all who would come to the institution for that purpose. Of the multitudes who flocked to this fountain of safety, numbers had been driven to it by the seizure of some of their families with the small-pox; and returned immediately to the care of the sick, without receiving any injury from their infected apartments. In not a single instance was the vaccine vesicle known to be transformed into a variolous affection; or even to be changed or modified by constant exposure to the variolous contagion.

It is indeed, gentlemen, apart from the subject and the purpose of my letter, yet I cannot but remark, that Dr. Smith, in permitting himself to say "that there was not in New-York *any*

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single bucket of water to extinguish the flame.' *No seasonable effort was made by any one;* but this plague was *allowed* to take its natural course, and it spread abroad, daily increasing its fury." p. 17. And in a "Prospectus of a permanent Vaccine Institution, to be established in the city of Washington," &c. he uses the following illiberal language in reference to the same occasion. "So little notice was taken of it, and so perfectly *careless of its consequences* were all those who ought to have felt some concern about it, that it was suffered to be propagated without any active opposition, until it became that terrible and destructive plague which has since destroyed the lives of so many of our citizens. The kine-pock, in the hands of any one attentive citizen, who would have made a proper use of it at the favourable moment which here presented itself, might have easily strangled this plague at its birth, &c. But it seems, that there was not then in New-York, any one individual or society, who possessed a just sense of the existing danger. There was no one disposed in mercy 'to throw a single bucket of water to extinguish the rising flame;' &c. How immense this waste of human existence! and how awful the punishment, which has been inflicted upon the people of the United States, if we consider the unlimited extent of the calamity which has since followed for want of that attention which was due to it when first discovered!" p. 13.

individual or society possessed of a just sense of the existing danger;" that "there was no one disposed in mercy 'to throw a bucket of water upon the rising flame;'" and that "no seasonable effort was made by any one;" has been guilty (to use the mildest language which charity can dictate) of a rash and unfounded declaration. It is an undeniable fact, that in New-York, vaccination was practised to a large extent at its first introduction into this country, when the prejudices of the profession, and the clamorous opposition of the populace, excluded it from most of our cities. It was here that the first public institution* was opened for the gratuitous vaccination of the poor, and the perpetuation of this inestimable blessing. And it is here that public munificence and private charity have, in an unparalleled degree, been directed to this noble and important object. On the very occasion when Dr. Smith exclaims against our apathy and indifference to this interesting subject, liberal appropriations of money were made by the municipal authorities, to assist in diffusing the blessings of vaccination; the physicians of the City Dispensary were directed to go from house to house, to vaccinate every individual who required it; a person was employed at the office of the Board of Health for the sole purpose of performing this operation; and repeated and urgent invitations were given, even from the pulpit, to all who were liable to the infection of small-pox, to come and receive gratuitous vaccination at this place.

3d. The third apology Dr. Smith makes for the accident at Tarborough is, that "*the same persons or subjects from whom the vaccine matter must be taken, (for it cannot be otherwise procured than from persons who are fit subjects for it,) may be the bearers of the genuine kine-pock and of the true small-pox at the same time.*" The truth of this proposition must, to a certain extent, be admitted; but it can, in no way, serve the purpose for which it was advanced by Dr. Smith. It has, indeed, been proved, that if a person is inoculated at the same time with the

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* This Institution was established in January, 1802.

virus of small-pox, and with the vaccine lymph, both diseases will be produced. So far Dr. Smith is correct in stating that a subject may bear kine-pock and the small-pox in his person at the same time. But it has also been proved, that as soon as the *constitutional* affection of one of these diseases is produced, the other disease is suspended ;* and that, should the vaccine infection predominate, the virus of the small-pox is extinguished in the system. The same rule holds good in cases where kine-pock inoculation has been performed during the period between the casual exposure to small-pox, and the eruptive fever of the disease. It is only, then, in the first or *local stage* of these affections, that they can exist together in the same constitution. Now, it cannot be supposed that Dr. Smith has ever supplied himself with matter at *this* period of the affection ; and, therefore, he could not have unavoidably and unknowingly procured the infection of variola in this way. But even granting that the two diseases may both go on to perfection at the same time in the same system, Dr. Smith will hardly allow us to suppose that, in procuring his matter for vaccination, he, who has been twenty years a vaccinator, was *unable to distinguish* between the vesicles of the vaccine disease and the pustules of small-pox ; and that he *ignorantly* supplied himself from the latter. And still less, I presume, would he be willing to grant, that he had been so imprudent as to procure any vaccine matter from a person who at the same moment was affected with small-pox ! But the fact is, neither Dr. Smith, nor any body else, has ever seen a case in which the two diseases were in full perfection ; and, therefore, this third proposition will not explain the introduction of small-pox into Tarborough.

" 4*th. The same identical kine-pock vesicle, under such circumstances as we are now unhappily involved in, that will one day furnish the most pure and genuine vaccine matter, is susceptible of a change in its natural properties, and within a few days af-*

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* Consult on this subject the " Practical observations on the inoculation of cow-pox, &c. By James Bryce, F. R. S. Ed."

terwards will furnish a different matter, capable of generating the most destructive small-pox."

His fourth proposition is as singular as it is erroneous. In the whole course of my practice in vaccination, (and I think I may justly lay claim to some experience in this department,) I have never witnessed such an occurrence. In all my reading on this subject, and in all my intercourse with the profession, I have never before learnt that the vaccine vesicle was liable to any such deterioration as the Doctor speaks of. Were it possible for the kine-pock vesicle to be transformed into a variolous pustule, or for the dried lymph to undergo such a change of its properties as in a few days to degenerate into a matter capable of producing the most destructive small-pox; how comes it that we have never before been apprized of this by the Vaccine Agent? and how is it that accidents have never, before the unfortunate affair at Tarborough, been known to occur from this source? Well may the Doctor say, that "few practitioners have any idea that in the selection of the vaccine matter, they may be exposed to so much danger from causes of this description." None, I believe, have ever entertained any such idea but himself; nor is it to be apprehended that the Doctor's information will ever give them much alarm.

Had I been aware, at the time I commenced this letter, that Dr. Smith had acknowledged, in a communication to the honourable the Speaker of the House of Representatives of the United States, that he himself had, through mistake, transmitted the matter of *small-pox* to Dr. Ward, in the form of scabs, which he had taken from a variolated patient,* I would probably not have troubled you with these observations. These strictures were written before I received the information. They may serve, however, to undeceive some reader who may never meet with Dr. Smith's acknowledgment. I cannot but take occasion to remark, that it is sincerely to be hoped, that as Dr.

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* See the "Report of the select committee appointed to inquire whether it be necessary to modify or alter the law to encourage vaccination," as received by the House of Representatives, on Friday, February 22d, 1822.

Smith has been appointed the public agent *to exterminate the small-pox*, he will never again preserve its contagion in any form, and thus run the risk of renewing and propagating this dangerous infection on another occasion.

With assurances of high personal regard,

I am, gentlemen, your's respectfully.

HENRY W. DUCACHET.

ART. IV. OBSERVATIONS *on* CRURITIS, *or* PHLEGMASIA DOLENS : communicated in a letter to J. W. FRANCIS, M. D. Professor of Obstetrics and the Diseases of Women and Children in the University of New-York, by DAVID HOSACK, M. D. F. R. S. Professor of the Institutes and Practice of Medicine in the University of New-York.*

New-York, March 11th, 1822.

DEAR SIR,

IN reply to your queries relative to Cruritis, I observe, that since the year 1791, when I commenced the practice of Medicine, several cases of this disease have fallen under my care. The following are the memoranda I made of them ; if you consider them as deserving a place in your journal they are at your disposal.

In the *first* case, it occurred under the ordinary circumstances in which the disease appears, viz. a few days after delivery, and before the disappearance of the lochia. It was treated by cathartics, dilution, liniments, fomentations, but without any view to its general inflammatory character: it was of six weeks duration, but ended without any permanent injury to the constitution, or to the affected limb.

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* In the first paper of this Journal notice was taken of a case of Phlegmasia Dolens, under the care of Dr. Hosack. Since that article was written, Dr. Hosack has obligingly favoured the editors with the particulars of that case more at large. In the present communication will also be found some novel views of this disease, and reasons for a different classification than has been heretofore adopted.—*Ed.*

The *second* case that fell under my notice also appeared soon after parturition, and during the flow of the lochia. Viewing the effusion in the limb as bearing some resemblance to dropsy, I had recourse, after prescribing an active cathartic, to a combination of calomel and squills, one grain of each administered three times a day. This prescription was attended with a manifestly favourable result, removing the disease in a few days.

In a *third* case, occurring under similar circumstances, the disease, after being confined to one limb for several days, appeared in the other, but was removed from both by the cathartic and diuretic operation of the calomel and squills.

The *fourth* case that offered, gave me a much more enlarged view of the nature of this complaint. The lady who was the subject of it had been confined twenty-three days at the time of her attack; the lochia had also entirely disappeared ten or twelve days; she had undergone a severe labour, having borne twins, and during her pregnancy experienced much inconvenience from her inordinate size.

She was first affected by cold producing catarrhal and pneumonic inflammation; but within forty-eight hours a metastasis took place to the limb, which proceeded to swell with all the symptoms of idiopathic cruritis, the affection of the lungs totally disappearing. By general blood-letting, saline cathartics, antimonials, tepid applications to the part affected, with a strict antiphlogistic diet and regimen, the first stage of the disease was in a few days removed; afterwards, by stimulating liniments, frictions, and the roller, the parts affected were restored.

A *fifth* case presented itself in the course of the last winter: In this lady it was induced by the excitement arising from the imprudent use of wine recommended by the practitioner who delivered her; her labour had been of short duration, and in all respects natural. By the antiphlogistic treatment this case also ended favourably in a few days.

Sixth. A lady who had been many years since affected by rheumatism in the left limb, after her confinement in which I attended her, became the subject of *cruritis*, affecting the same

limb that before had been the seat of suffering; her labour was a natural one. In this case her disease was the effect of cold, induced by an imprudent change of dress. When the limb was first affected, she considered it as a renewal of her former attack of rheumatism, which before had been altogether unconnected with parturition. In a few days it yielded to the same treatment I have above inculcated, and which I have more fully detailed in my observations on this subject, contained in the appendix to the last edition of Thomas's Practice of Physic, and in my notes subjoined to the article *Medicine* in the American edition of Brewster's Edinburgh Encyclopædia.

Seventh. I prescribe for a lady, the mother of a large family of children, who has suffered four attacks of this disease after parturition. The complaint in every instance took place within nine days after delivery, commencing with pain in the calf of the leg. It always affected the same limb, and has left the ankle permanently thickened, enlarged, and painful under ordinary pressure.

Eighth. In December, 1820, my son, Alexander E. Hosack, who is engaged in the study of medicine, delivered a poor woman, in whom the disease appeared as early as the second day after delivery. In this case the inflammation and swelling took place in both limbs simultaneously. The labour had been natural, and of short duration. The woman was of plethoric habit, insomuch that delirium took place in the latter stage of her labour. The patient was situated in a cold uncomfortable apartment, which was considered as the exciting cause of her disease. This case also yielded to the lancet, and other means of depletion.

Ninth. During my last tour of duty in the winter of 1821 and 1822, at the New-York Hospital, a very similar painful enlargement of the limb occurred in a man who had been admitted as a fever patient. In a few days the left leg and thigh became the seat of inflammation, attended with a swelling of the whole limb, exhibiting the remarkably glossy whiteness and œdematous appearance that haracterisec cruritis in the female,

and attended with similar pain and sensibility to the slightest movement. The patient had been so much reduced and emaciated by the preceding fever and the means prescribed, that upon the appearance of this local affection, the usual evacuations by the lancet were in his case altogether inadmissible. The only remedies employed were such as were calculated to allay the sufferings of the limb, and to moderate the general febrile action of the system. It ended in an extensive suppuration in the thigh, followed by hectic fever, and ultimately proved fatal.

From the foregoing cases the following inferences may be deduced :—

1st. That cruritis is an inflammatory disease, not only affecting the limb, but the whole system.

2d. That it most usually proceeds from a suppression of the natural excretions, the effect of cold, stimulating drinks, and other means of excitement.

3d. That it is not necessarily connected with the lochial discharge, as inculcated by Trye, Denman, and indeed by Rodrigus Decastro, of Hamburgh, in 1603, by Wiseman, in 1676, and by Mauriceau, in 1712, who were the authors of this doctrine.

4th. That the first irritations frequently appear about the calf of the leg, and not in the groins and pelvis, as asserted by Dr. Denman.

5th. That it follows easy as well as difficult labours, and therefore cannot proceed from the pressure of the child's head upon the edge of the pelvis rupturing the lymphatics, as supposed by Mr. White.

6th. That it is not a disease confined to the lymphatics, but as in the cases recorded by Dr. Hull, it appears in every part of the affected limb.

7th. That it is not confined to females, but, as in the cases recorded by Dr. Hull, Dr. Ferriar, Dr. Thomas, and others, it occasionally appears in males.*

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* See Medical and Chirurgical Journal for 1817. Medical and Chirurgical Transactions for 1819.

8th. That as in gout and rheumatism, when depletion is not actively employed, the inflammation, after appearing in one limb, is in some cases transferred to another.

9th. That it sometimes appears in both limbs at the same time.

10th. That the general means of subduing inflammatory action are the most effectual in removing the *active* stage of this complaint.

11th. That in the second stage of cruritis, in addition to the use of general stimuli and tonics, stimulating spirituous liniments, friction, and the roller, are most useful in restoring the circulation, and in exciting the absorbents in the removal of the swelling which remains in the passive stage of this disease.

12th. That occasionally, as in the cases related by Hull, Denman, and by Zinn,* it ends in abscess, and proves fatal, especially where the antiphlogistic treatment has not been vigorously pursued in the first stage of the disease, or when it occurs under great exhaustion and debility of constitution.

In compliance with your request, I will with pleasure make you occasional communications of a practical nature.

With my best wishes for the success of the Journal you are about to commence, I am, Dear Sir, with great regard, yours,

DAVID HOSACK.

Art. V. A Case *of* Tumour *within the* Pelvis, *preventing parturition.* By Jacob Dyckman, M. D.

The records of medicine afford sufficient evidence of the occasional occurrence of tumours within the pelvis, obstructing or entirely preventing parturition. Fatal consequences may ensue from such incidents, and it is therefore of importance that the attention of practitioners of midwifery should be directed to-

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* See Gottingen Transactions.

wards this interesting subject. The following case, which has fallen under my observation, and which appears to differ in some respects from any that I have yet seen recorded, will not, it is hoped, be thought uninteresting.

In August, 1820, I was called to a woman, at the full period of her third uterine gestation, who had been in labour a considerable time. I found her under the care of a midwife, who reported that the waters had been discharged, and that she could plainly feel the head of the child presenting. On examination, *per vaginam*, I soon discovered that what the midwife had mistaken for the head of the child, was a large and firm tumour pressing laterally and posteriorly against the vagina, and which appeared to be situated partly between it and the rectum, but chiefly inclined to the right side of the pelvis. It intrenched so much upon the capacity of the pelvic cavity as to render impracticable all attempts to ascertain the state of the os uteri. Efforts were made to dislodge the tumour from its situation by pressing it in different directions, but in vain; it appeared to be firmly attached to the vagina and lower parts of the pelvis. Its nature could not be ascertained; but I was induced, from several circumstances, to believe that it could not be ovarian; nor could it be owing to a rupture of the cervix uteri and protrusion of some part of the child into the pelvis, for none of the symptoms which give evidence of such an occurrence were present; *and the labour pains continued regular*. The tumour did not yield or diminish by the force of the pains, and every attempt to displace it had proved ineffectual. I was therefore convinced of the impossibility of the child being born, without artificial assistance. But as the patient was much exhausted, and did not appear to be in immediate danger, I conceived it unnecessary to take any immediate steps towards advancing the delivery. A large anodyne was administered for the purpose of allaying the pains, and quieting the irritations of the system.

The anodyne had, in part, the desired effect, and the patient got some sleep, by which she was much refreshed. The pains returned with considerable force, and protruded the umbilical chord,

which, by its pulsation, gave evidence of a living child in the womb. After some little perseverance, I was enabled to pass my finger sufficiently far along the left side of the tumour to ascertain the presentation of the child's head, which was resting upon the upper part of the tumour.

It was evident that any further delay would only be productive of additional hazard, and that the safest mode of proceeding would be to puncture the tumour, and diminish its size, so as to allow the passage of the child. Drs. Francis, Hosack, Kissam, and Moore, who were invited to see the case, concurred with me as to the propriety of such a course. Preparations were accordingly made for the performance of the operation forthwith.

The patient being placed in a proper position, the tumour was punctured through the vagina, about an inch and a half within its external verge, but no discharge followed. The incision was then extended, and by means of proper instruments the tumour was broken down, and a considerable portion of it, consisting of fleshy and bony substance mixed with blood, was removed. The os uteri, which could now be felt without difficulty, was found to be fully dilated, and the tumour appeared to be sufficiently diminished to allow the child to pass. But the natural efforts of the mother being of little avail, on account of her great exhaustion, and the child being dead, as was evident from the pulsation in the chord having ceased, it was judged expedient to employ the perforator, and deliver with the crotchet. A full-sized child was brought away, after which the woman was put to bed, and made as comfortable as circumstances would permit.

The recovery of the patient was tedious and interrupted. The remains of the tumour were discharged by suppuration. A number of pieces of bone came away, and among others some *perfectly formed vertebræ* of the neck and back, and several *metatarsal bones.*

It seems evident from the details that have been given, that the tumour within the pelvis preventing the delivery of this woman, consisted of an extra-uterine fœtus, which had acquired

a considerable size, and filled the greater part of the pelvic cavity. No other means of effecting the delivery could have been used than the one resorted to, except the Cesarean operation, which would have been justifiable, if the tumour had been incapable of diminution by puncture.

ART. VI. OBSERVATIONS *on the use of* EMETICS *in* CONSTIPATION *of the Bowels:* communicated in a letter to JOHN B. BECK, M. D. by DAVID HOSACK, M. D. F. R. S. Professor of the Institutes and Practice of Medicine in the University of New-York.

New-York, March 15th, 1822.

DEAR SIR,

IN the treatment of constipation of the bowels, it appears to be generally agreed upon by the profession, that when we fail to evacuate the intestines by the various cathartic remedies ordinarily prescribed for this purpose, the last resource is mercury carried to the point of salivation; at the same time trusting to opiates and antispasmodics to allay the pain, and to the usual antiphlogistic means of subduing any inflammation of the bowels that may be induced in the course of the disease. In the year 1796, I communicated to Dr. George Pearson, of London, a remarkable instance of constipation yielding to this treatment, after twenty-one days' continuance of the disease.* Reflecting upon the manner in which mercury operates in relieving cases of this nature, after the gums have become affected, it occurred to me that the action of this metal is not only by its effects upon the secretions in general, but more especially upon the biliary organs. The dark coloured and acrid discharges that succeed to this operation of mercury, appear favourable to this explanation. In like manner the general derangement of the digestive organs, the foul tongue, the offensive breath, the sallow complexion, that usually precede and attend upon the

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* See Duncan's Annals of Medicine for the year 1796, vol. i. Edinburgh.

first stage of this disease, no less point to this obstructed and torpid state of the liver, as having great agency at least in predisposing to the disease in question, while a check of the perspiration and certain articles of diet, are not unfrequently the exciting causes of irritation and of the spasm and inflammation which ordinarily constitute an attack of this complaint. With these views I was led to the use of emetics as best calculated to remove the hepatic obstruction which appears to lay the foundation of this disease, while by their febrifuge and antispasmodic operation they are no less useful in removing the fever, the inflammation and constriction that constitute some of the most distressing as well as dangerous symptoms that attend a constipated state of the belly. The cases which have fallen under my care, since the adoption of this mode of treatment, are so favourable to the views suggested, that agreeably to my promise, I now submit them to your consideration, and if you deem them deserving more public notice, have the goodness to give them a place in your Journal.

1st. Mr. W. B. of Dutchess county, who had suffered a very severe and dangerous attack of constipation, of which he had been relieved by mercury, prescribed by the late Dr. Bard, after a great variety of the ordinary cathartics had been administered in vain, when on a visit to New-York, was seized with the same symptoms of distress and obstruction of the bowels that appeared at the commencement of his first attack. I observed his countenance to be sallow, his tongue covered with a yellow sordes, his breath offensive, his stomach disturbed, but the arterial system not yet sensibly affected. The ordinary cathartic medicines being rejected, I gave him an emetic of tartarized antimony. It operated freely, producing a general relaxation of the system, with some discharges by vomiting of bilious matter, which, from its viscidity and dark colour, appeared to have been long pent up in the gall-bladder: they were succeeded by copious evacuations by stool. He was instantly relieved, and was himself sensible that by this timely prescription he had been saved from a renewal of the same sufferings he had experienced in his first attack.

2d. Mr. S. W. a merchant of this city, whom I had frequently attended in very severe and dangerous attacks of constipation, and which only yielded to mercury, administered to the point of salivation, some years since experienced a renewal of the symptoms that usually had announced a visitation of his disease. I found him in great pain, his bowels in a state of violent constriction, his pulse small, his countenance sallow and livid: I gave him instantly fifteen grains of ipecacuanha combined with two of emetic tartar. It operated freely, both by vomiting and by the bowels. He was immediately relieved, and had no return of the obstruction.

3d. Mr. W——e, a gentleman of the bar, who had also been frequently my patient under obstinate constipation, and had been relieved by blood-letting, blisters, the warm bath, enemata, and mercury, given to the extent of salivation, experienced one of his usual attacks. I gave him an emetic of ipecacuanha and tartarized antimony. It also had the same good effects of restoring the biliary evacuations, and of removing the intestinal obstructions, without having recourse to the ordinary offorts that had been directed on former occasions. I have in like manner relieved the same gentleman, by an emetic in a second attack of a similar nature.

4th. The late lieutenant Walter Stewart, a highly meritorious officer of the United States Navy, had suffered numerous attacks of this disease in Philadelphia. In some of those he had been relieved by blood-letting, the warm bath, and injections of tobacco smoke, as directed for him by the late Dr. Wistar, but in most the obstruction was not removed until recourse was had to mercury, administered to the point of salivation, and which, in his case, required a much longer continuance of the medicine than is usually necessary to produce that effect. When in New-York he twice experienced a return of the same disease; in both instances I directed for him an active emetic, which afforded him immediate relief, by producing copious bilious evacuations from the stomach, followed by large discharges from the bowels.

5th. Miss L—— —— who is constitutionally inclined to a torpid state of the intestines, and is very liable to obstinate attacks of constipation, has been three times under my care in this disease. After directing in vain the various cathartics ordinarily prescribed, and all the usual forms of enemata, I at length directed the emetic before mentioned: it was followed by immediate relief, although the disease had been of several days duration. Upon another occasion I directed the emetic in the commencement of her complaint, with the same successful result. The same young lady a short time since experienced a return of the same disease, but attended with more severe pain than she had suffered upon any preceding occasion. Being confined to my bed, I requested an eminent physician to visit her; he found her bowels had been confined about seven days, attended with symptoms of intestinal inflammation. After letting blood from the arm, he directed fomentations to be applied to the abdomen, and enemata variously composed to be administered, and advised castor oil, salts, calomel and jalap, in succession, but all to no purpose. The purgative medicines were rejected by vomiting; the enemata were returned as they were administered, without containing the least portion of fœcal matter. She earnestly solicited an emetic to be given her, urging that she had been relieved by this means in both of her former attacks; this was declined by the physician, who considered it to be a hazardous practice to prescribe emetic medicines in a case of this nature. Recourse was had to calomel and opium; salivation was the result, but without the relief by the bowels which usually follows this operation of mercury. Upon my recovery I visited her; she still suffered severe returns of pain: her mouth had been sore three or four days, but notwithstanding the use of enemata which had been frequently administered as fomentations to the bowels when her pain was most severe, no alvine discharge whatever had taken place. Although fifteen days had elapsed since the commencement of her obstruction, I gave her an active emetic, viz. fifteen grains of ipecacuanha and two of tartarized antimony, directing it to be repeated at the expira-

tion of an hour if necessary: the first operated very freely, discharging a large quantity of dark-coloured bilious matter by vomiting, followed by similar copious evacuations by stool. In twenty-four hours she was so entirely relieved that my attendance became almost unnecessary, except for the removal of the soreness of the mouth that remained from the mercury that had been prescribed; for this purpose a gargle of yest, honey, and borax, was directed, with occasional small doses of calcined magnesia, to preserve the bowels in a soluble state.

6th. Captain A. who had contracted, in the East-Indies, a disease of the liver, has recently been affected by a constipated state of the belly, attended with spontaneous vomiting; finding no relief from injections, and all cathartic means given by the mouth being rejected, I gave him an emetic. As in the former cases, it was followed by a general relaxation of the system, and plentiful discharges both by the stomach and bowels.

7th. In another case of a young gentleman, who had experienced many severe attacks of constipation, attended with high inflammatory symptoms, in which, in addition to the use of mercury it had been necessary to make repeated use of the lancet and other means of counteracting the attending inflammation, I have also recently directed emetics with the best effects not only in obtaining discharges from the stomach and bowels, but also in removing the pain, the spasmodic constriction, and febrile symptoms, which have usually attended every return of his disease.

From these facts I have been led to the following conclusions.

1st. That a constipation of the bowels is usually attended with, and frequently produced by, a torpid state of the liver, and consequent deficiency of the biliary discharge.

2d. That the pain, spasmodic constriction, and inflammation, attendant upon this disease, are the result either of the mechanical obstruction occasioned by the deficiency of bile, and consequently a retarded peristaltic movement of the intestines, or the effect of a sudden change of perspiration, or of a particular article of diet.

3d. That in the commencement of constipation, or in its more advanced stage, when the symptoms of inflammation have been subdued by the lancet, emetics may be very advantageously exhibited both for the purpose of removing the hepatic obstruction and of counteracting the spasmodic constriction and pain ordinarily attendant upon this disease.

4th. That the salutary effects which have been occasionally derived from injections of tobacco smoke are attributable to the general relaxation, the nausea, and in some cases, the vomiting, which that narcotic produces.

5th. That the benefits that have in like manner been obtained in some cases from the use of tartarized antimony, administered by injection, are to be accounted for by the nausea and vomiting that have been the effects of its operation, but which are to be obtained with more certainty from the same medicine given by the stomach, and to the extent of full vomiting.

In like manner, inasmuch as a torpid state of the liver and a diminished secretion of bile are generally known to constitute a part of the proximate cause of dysentery,* we obtain a satisfactory solution of the salutary operation of injections of ipecacuanha in that disease, as advised by Dr. Thomas Clark;† but which effects are more certainly to be obtained from the use of ipecacuanha given by the stomach, as prescribed by Sir John Pringle, or of tartarized antimony, as recommended by Senac.

With the hope that these facts, and the principles deduced from them, may lead to a more satisfactory view of the pathology and treatment of the disease which is the subject of this communication, I am, Dear Sir,

Respectfully and truly your's,

DAVID HOSACK.

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* See Drs. Monro, Cleghorn, Pringle, and Girdlestone.

† Observations on the diseases of the East and West Indies, by Thomas Clark.

Art. VII. Remarks *on* Phosphoric Acid *in the treatment of* Jaundice, in a letter to Dr. John W. Francis, from Caleb Miller, M. D. of Rhode-Island.

Bristol, (R. I.) March 14th, 1822.

Sir,

It is now about seven years since I first began to administer the phosphoric acid in Jaundice. On my first having recourse to it, I gave it in small doses, being apprehensive of its deleterious effects upon the human constitution: but experience has convinced me my fears were groundless.

I was induced to make my communication to Professor Silliman on the subject of this acid, from a conviction that it was the most useful medicine I was acquainted with in that disease, and that it was likely to prove so in the hands of others. I should have made known this practice sooner, had it not been that I thought I might have been mistaken as to its operation; but I delayed until I was fully convinced of its sanative powers in that affection.

Since my letter to Professor Silliman, I have had under my care several severe cases of jaundice, occurring in old as well as young persons, and they have all readily yielded to the acid.

In my paper in the American Journal of Science and Arts, I might have entered into more minute detail, but it seemed the less necessary as the phosphoric acid is a medicine not particularly dangerous, and any small variation in the dose could do no harm, as I think the stomach the best guide in the administration of the remedy in the disease. I am in the habit of prescribing the acid in balm tea, made agreeably sour, the patient to drink of it as much as the stomach will bear, until it operates as a diuretic, and this effect will generally take place within the course of six hours, and often sooner. In the course of six hours more the urine will be changed to a light colour, when the acid is to be used more sparingly until the urine assumes its natural state: this effect generally takes place in about three or four days.

In my letter to Professor Silliman I have observed:

"About six years ago I had a very obstinate case that resisted the common remedies. I was led to use the phosphoric acid on the principle that acids decompose the bile. I made choice of this on account of its existing in a separate state in the blood.

"I directed a large spoonful of the acid as prepared in Murray's Materia Medica in a pint of balm tea, to be taken as fast as the stomach would bear it, till it should operate as a diuretic. In twenty-four hours the patient had taken eight pints, and it had operated powerfully as a diuretic. Neither the urine nor the white of the eye was as yellow as before, by a very obvious difference. I ordered a continuance under the same directions, and in two days more the urine was nearly the natural colour; but the skin had not improved in the same proportion. I advised tonics, with the occasional use of the acid, and my patient shortly recovered.

"I have had many of the same complaint since that time, and have directed it nearly in the same manner, according to the age and condition of the patients, and the result has been the restoration of health in a very short time. In general, the yellowness disappeared in three or four days from the urine, but continued a little longer on the skin; by the use of tonics, and sometimes a little of the acid, this is however removed in a few days. I have met with only one patient, whose symptoms have not yielded to the above plan. This was a person eighty years of age. Even in this case, however, the acid always produced relief; but the complaint soon returned. My present practice is to give a cathartic of calomel and jalap, or some of the neutral salts, and then the balm tea moderately acidulated with the phosphoric acid, which I direct to have continued till it operates as a diuretic and until the urine becomes clear, or nearly so; this commonly takes place in the course of two days. I have advised other acids when this has not been at hand; but I am inclined to give the preference to the phosphoric, although I think the others deserve a farther trial."

Let me further add, that I recommend this acid in all cases of debility where I would advise any other acid, and that I entertain a high opinion of its tonic powers.

I remain, yours, &c.

CALEB MILLER.

Art. VIII. Description *and* Analysis *of* Gibbsite, *a New Mineral:* by John Torrey, M. D. of New-York.

[Read before the Lyceum of Natural History, March 18th, 1822.]

Among a promiscuous collection of minerals I lately received from the Northwestern parts of Massachusetts, I observed one, which, from some uncommon characters it possessed, I was induced to submit to a minute examination. It occurs in a neglected mine of brown hæmatitical iron ore, in the town of Richmond in Massachusetts, where it was first observed by Dr. Ebenezer Emmons, of that place.

This substance was by some supposed to be a variety of Arragonite, and by others, phosphate of lime; but a few experiments proving it could not be either of these minerals, an analysis was undertaken, in order to ascertain its nature with certainty. Professor Dewey, of Williams College, was engaged with its analysis at the same time with myself, and we agreed very nearly in our results, so that it is doubtful to whom the credit of priority is due. The Professor first announced it as a variety of *Wavellite*, in Silliman's Journal. vol. 2, p. 249; and in vol. 3, p. 239, he gives additional reasons for supposing it to be that mineral. Since, however, Berzelius has lately examined the European varieties of Wavellite, and found their composition so entirely different from what had been stated by Davy and Klaproth, there remained very little doubt but that the Richmond mineral is, what I always supposed it to be, a species not hitherto described.

The detail of the analysis of Berzelius, which is published in the 12th vol. of the Journal de Chymie et Physique, I have

not been able to refer to, as the work is not to be had here, and I am therefore ignorant of the means by which the errors of Davy and Klaproth were avoided.

Description of the Mineral.

External characters. It occurs in small irregular stalactitical masses from an inch to three inches in length, and one inch or more in breadth, consisting of an aggregation of elongated tuberous branches, laid parallel, and united together. Sometimes the masses are larger, tuberous, and incrusting.

The colour is dirty white, greenish white, and grayish.

Its hardness is rather superior to that of calcareous spar. It is tough, but easily reduced to powder.

The fracture is indistinctly fibrous, the fibres radiating from an axis.

Its lustre is a little glimmering.

Surface dull.

It is slightly translucent.

Specific gravity, 2.40.

Chemical characters. It does not effervesce with acids. Before the blowpipe it whitens, but undergoes no farther change, even when the heat is increased to the utmost.

Analysis.

1st. One hundred grains in fine powder were heated white hot in a platina crucible for two hours. The mineral underwent little apparent change, but lost 34.7. grains in weight. The same experiment was repeated with other portions of the mineral, and the loss varied, from 34. to 35.5.

2d. Some of the powdered stone was digested in nitric acid. It was speedily dissolved without effervescence, and formed a transparent solution. This had a very astringent sweetish taste, and did not crystallize when reduced by evaporation. A part of the solution was diluted with water, and various tests were applied to it. Sulphuric acid did not disturb its transparency. Ammonia threw down a bulky opaline precipitate. Prussiate of potash, and tincture of galls, produced no effect, neither did the solution of oxalate of ammonia.

3d. One hundred grains of the powder were boiled in sulphuric acid. The whole was dissolved without residue. The excess of acid was driven off by heat, leaving an astringent salt which was soluble in water. This was again made slightly acid. A small quantity of carbonate of potash and some water were added, and heat applied. A transparent solution was obtained, which had a strong taste of alum. It was evaporated and set aside. Well defined octahedral crystals soon formed. These crystals had the peculiar sweetish astringent taste of alum, and intumesced strongly when laid on hot coals. To ascertain whether they were really sulphate of alumine of potash, I dissolved them in water, and added to the solution pure ammonia: an abundant precipitate was thrown down, which was entirely soluble in a solution of caustic potash.

The alkaline solution was neutralized with nitric acid; carbonate of ammonia was then added till precipitation ceased, and the whole thrown on a filter. The earth when well washed and heated to redness for half an hour, weighed 64.8 grains, and had all the properties of pure alumine. It formed soluble and *deliquescent* salts with the nitric, sulphuric, and muriatic acids. It was precipitated from its solutions by potash, and re-dissolved again when these alcalies were added in excess. When a strong solution of potash or soda was poured into a solution of the sulphate, a large quantity of octahedral crystals of alum were suddenly deposited.

From these experiments there can remain very little doubt but that the mineral under examination consists almost entirely of alumine, and something which escapes by the application of heat. As sulphuric acid does not evolve any elastic fluid, and no perceptible vapour is produced when heat is applied, we may safely pronounce this volatile part, *water*.

4th. There being a possibility that the alumine might be united to phosphoric acid, as nearly all the earthy phosphates are soluble in acids, some of the mineral was boiled in water with three times its weight of subcarbonate of potash, the liquid was filtrated, and the residue well washed and collected. This resi-

due, on being tested with acids, appeared to have suffered no change, for no effervescence took place. The filtered liquor, on being *neutralized* with nitric acid, let fall a trifling precipitate which was ascertained to be nothing but alumine. No further change took place on adding muriate of lime. Hence we infer the absence of phosphoric acid.

5th. A portion of the powdered stone was next tested for fluoric acid, by placing it on a piece of glass, moistening it with sulphuric acid, and applying a gentle heat. No erosion could be perceived.

6th. By the preliminary experiments we have proved the absence of iron and lime, but these are sometimes found, especially when the purest specimens are not employed. They never I believe exist in greater quantity than two or three per cent. Magnesia and Zircon are excluded by the test of the caustic alcalies, which do not dissolve these earths. Barytes and Strontian would have been detected, had they been present, by the sulphuric acid in Exp. 2. Tests were applied for the remaining earths, but none were detected.

The results of the analysis therefore are:

Alumine, -	64.8
Water, - -	34.7
	99.5
Loss, - -	1.5
	100.0

The following is the result of the analysis of Wavellite, by Berzelius:

Alumine, -	35.35
Phosphoric acid,	33.40
Fluoric acid,	2.06
Lime, - -	0.50
Oxyds of Magnesia and Iron, -	1.25
Water, - -	26.80

It is therefore a hydrous phosphate of alumine, instead of a *hydrargillite* as it was considered by Davy. The analysis of Wavellite by three different and celebrated chemists is here added for comparison. They are extracted from Jameson's Mineralogy.

	Barnstable Wavellite.		Cornish Wav.	Hualgayoc.
Alumine,	71.50	70.0	58.76	68.00
Oxyd of iron,	0.50		19	1.
Lime,		1.4	37	
Silex,			6.12	4.50
Water,	28.00	26.2	30.75	26.50
Loss,			3.87	
	100.00	100.00	100.00	100.00
	Klaproth, Beit. b. iv. s. 110.	Davy. Nich. Jour. xi. 157.	Gregor.	Klaproth, Beit. b. v. s. 111.

These results stand on such high authority that we should scarcely be inclined to listen to any who should dispute them, except so distinguished a chemist as Berzelius. There can, however, be no doubt but that the Wavellite contains phosphoric acid, especially since its existence in that mineral has been confirmed by the experiments of Professor Fuchs. It appearing from our analysis, that the mineral of Richmond differs in its composition from Wavellite, and its external character being so dissimilar, there can be no hesitation in giving it a proper name, and assigning it a place in the system. The name of Gibbsite will, I hope, be adopted for this singular substance, in honor of one* who has done so much for the advancement of American mineralogy.

In a chemical arrangement of minerals, Gibbsite must occupy the place of Wavellite, which must now be transferred to the *earthy salts.* The name *hydrargillite* of Davy would be proper for the new mineral, if there would not be danger of confounding two minerals under one appellation. According to the

* Colonel George Gibbs.

nomenclature of Proust, who established the class of *hydrates* it would be a *hydrate of alumine;* but the name is objectionable, as it conveys the idea of a *salt*, when the compound is not of a saline nature.

Nearly all the Gibbsite yet found has been collected at the mine in Richmond, where Dr. Emmons discovered it. It occurs in considerable quantity among the *rubbish;* but the mine being closed, we are ignorant of its precise situation and connexions. No doubt it is produced by infiltration into cavities, for the mineral is evidently stalactitical. It is a little remarkable, however, that so little iron should enter into its composition, as it occurs among *hæmatite*, and is often found attached to it.

REVIEW.

ART. I. ELEMENTS OF THERAPEUTICS AND MATERIA MEDICA. *To which are prefixed two Discourses on the History and Improvement of the Materia Medica, originally delivered as Introductory Lectures.* By N. CHAPMAN, M. D. Professor of the Institutes and Practice of Physic and Clinical Practice in the University of Pennsylvania, President of the Academy of Medicine of Philadelphia, &c. &c. Second edition, enlarged and revised. 2 vols. 8vo. Philadelphia, 1821.

EVERY person of the least discernment must have observed, that within a very few years, medical science has received an impulse in this country, to which it had hitherto been a stranger. The evidences of this fact are so glaring, as scarcely to require any illustration. It may be recognized in the augmented number and increased respectability of our schools of medicine—in the mutiplication of our medical journals—in the intellectual vigour and originality displayed in our medical productions, and in the general intelligence and activity which pervade the profession from one end of the country to the other. In no department of medical science, do we think, has this impulse been felt more efficaciously, or been attended with happier results, than that of the Materia Medica. It is a truth which cannot be denied, that anterior to the revolution but little progress had been made in investigating the character and properties of our native medicinal plants. We could boast indeed of some distinguished naturalists, and of many intelligent as well as learned physicians, who were abundantly qualified for the successful cultivation of this department of medical knowledge. The colonial government, however, was but little calculated to elicit their powers, or

to stimulate their ambition. To this cause, among many others, must be attributed the apathy of men, who, under other and more auspicious circumstances, would doubtless have shed a lustre on the era in which they lived. Even after our revolution had been achieved, the excitement occasioned by that great event, seemed for a time to unfit the mind for the calm pursuits of scientific and philosophical research. As was natural enough, men appeared more concerned about the public weal, and were more intent upon erecting and consolidating a system of rational and independent government, than about cultivating literature or science. Almost all the active talent of the country was accordingly enlisted in the service of the state, or at least embarked in that profession which presented the most direct road to political distinction. Hence it happened that medicine, as well as the other sciences, continued for several years in a languishing and neglected condition. With regard to our materia medica, it was not until the time of the late Professor Barton, that any considerable attention was directed to its cultivation. To him is unquestionably due the high honour, not merely of having led the way in the investigation of our native medicinal vegetables, but also of having originated and diffused, to no inconsiderable extent, a taste for the natural sciences generally. He was the first person who attempted any thing like a systematic view of the materia medica of the United States,* and his labours have done infinite honour to himself and to the country. The splendid publications which have recently appeared,† on that subject, are in no small degree, we conceive, indebted for the

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* See the "Collections for an Essay towards a Materia Medica of the United States, by Benjamin S. Barton, M. D. Professor of Materia Medica, &c. &c. in the University of Pennsylvania."

† See "Vegetable Materia Medica of the United States, or Medical Botany, by Wm. P. C. Barton, M. D. &c. Philadelphia," and the "American Medical Botany, being a collection of the native medicinal plants of the United States, containing their Botanical history and chemical analysis, and properties and uses in medicine, diet, and the arts, with engravings, by Jacob Bigelow, M. D. &c. Boston."

patronage which they have received, to the direction thus given to the public mind by that distinguished physician and naturalist.

The work of Dr. Chapman is of a different character from any of those just alluded to, inasmuch as it is not confined to the consideration of our own medicinal productions, but takes in the whole range of the materia medica, and contains copious discussions concerning the action of medicines and the nature and cure of almost every disease to which the human frame is liable. It is the first work of the kind which has been produced in this country; and we are proud to say, that its literary, no less than its professional merits will deservedly secure to its author a high rank among the most enlightened and accomplished of physicians. For tasteful and elegant composition—for ingenious speculation, and for general interest, it stands unrivalled by any work of the kind in the English language. In saying this, we by no means wish to disparage the excellent work of Murray. In its way it is admirable, and as a work of *science* is far superior to that of Dr. Chapman. But Murray was no practical physician, and the evidences of this are too apparent not to be observed. His Materia Medica is accordingly extremely defective in the very respect in which, we think, Dr. Chapman's so much excels.

In thus expressing our sentiments concerning the general merits of this production, we do not mean to be understood as approving of all the opinions and doctrines which it inculcates. On the contrary, not a few of them appear to us to be signally erroneous. In an especial manner do we think this to be the case, with regard to a good portion of our author's reasonings concerning the *modus operandi* of medicines. As this is a subject which has been laboured with a good deal of earnestness, and upon which really Dr. Chapman has displayed no small share of ingenuity, we shall take the liberty of examining it somewhat at large. In explaining his views concerning the operation of medicines, our author tells us, "that they *all* act by exciting a local impression which is extended through the medium of sym-

pathy."—vol. i. p. 60. As a corollary from this theory, he denies that any substances ever enter the circulation. "It must be acknowledged," says he, "that no substance, in its active state, does reach the circulation, since it is shown, that a small portion even of the mildest fluid, as milk or mucilage, oil or pus, cannot be injected into the blood-vessels, without occasioning the most fatal consequences."—vol. i. p. 64. To us this doctrine seems singularly inconsistent with known and acknowledged facts. Let us, however, examine some of Dr. Chapman's arguments in support of it. A prominent argument, and one which seems to be dwelt upon with considerable complacency, is, "that chyle, however diversified the materials may be out of which it is formed, whether animal or vegetable, has essentially an identity of nature. This "fact of the perfect and uniform constitution of chyle seems, at once," we are told, "to put down the hypothesis" that any crude substances are ever taken into the circulation. Now, against this argument we would interpose one or two objections. It does not appear, in the first place, to be really the fact, that the chyle, whether formed from animal or vegetable food, possesses this "perfect uniformity and identity of constitution," for which our author contends. So far from this, the very reverse has been completely established by one of the best chemists now living. Dr. Marcet, in his analysis of chyle,* informs us that the chyle from vegetable food yields, by analysis, about three times as much charcoal as that from animal food; that the chyle from animal food generally begins to putrefy in three or four days, whilst that from vegetable food can be kept for weeks, or even months, without undergoing putrefaction; that the chyle from animal food is always milky, and on standing, an unctuous white creamy substance collects on the surface; its coagulum is opaque, and has a pink hue; the chyle from vegetable food is commonly transparent, or nearly so, like common serum; its coagulum is nearly colourless, like an oyster, and no creamy substance rises to the surface. This state-

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* Medico-Chirurgical Transactions, vol. vi. p. 630.

ment certainly exhibits several very striking points of difference between the chyle formed from animal food, and that formed from vegetables; and it unquestionably does away the broad position of our author concerning the "perfect uniformity" of chyle. Should Dr. Chapman endeavour to shield himself from the force of this representation, by urging that the difference pointed out in the analysis of Dr. Marcet is merely a variation in the proportions of the same elementary ingredients, we will refer him to his own work for a summary refutation of such a suggestion, when he tells us, "that experiments have fully demonstrated, that articles widely discrepant in their general nature, as aliment and medicines, the most salutary food, and the rankest poison, exhibit, on analysis, nearly the same results. This indeed holds so generally true, that the virus of the viper, and the mildest mucilage, the poisonous prussic acid, and the nutritive flesh of animals, constitute no exception. Decomposed into their elementary principles, they are essentially the same." vol. i. p. 42. If, therefore, a variation in the proportions and combinations of its elementary ingredients do not constitute a real difference in the chyle, then it follows from Dr. Chapman's own showing, that there is no difference between "aliments and medicines"—between "the most salutary food and the rankest poison"—between "the virus of the viper, and the mildest mucilage"—or between "the poisonous prussic acid, and the nutritive flesh of animals."

A second objection which we have to make against this doctrine of the "perfect and uniform identity" of chyle, is, that it is positively contradicted by facts too well attested to be set aside. By Musgrave, Fordyce, and others, it has long since been shown, that certain articles, taken into the stomach with the food, will impart their peculiar colour to the chyle, and must therefore have become incorporated with it. By Dr. Chapman this is denied, on the ground of experiments made by himself and others, in the University of Pennsylvania, although we think he is very far from being borne out in his conclusions, even by his own statement. "None of the preparations of iron,"

he tells us, "of copper, of lead, nor the colouring matter of indigo, of madder, or of rhubarb, can be traced even as far as the chyle. Being introduced into the small intestines of dogs, *these several articles were observed to be rapidly taken up by the lacteals*, the coloured ones losing their tints on passing on, and, in every instance, so completely were their properties obliterated, as not at all to be cognizable by any chemical tests in the contents of the thoracic duct."—vol. i. p. 68.

Dr. Chapman, we presume, will not pretend that the lacteals contain any other fluid than the *chyle*, and if so, he upsets his whole argument by the admissions which he makes in the paragraph just quoted. The fact that the chyle, when it reached the thoracic duct, had lost the colour imparted to it by the various substances mentioned in these experiments, may be explained in a very simple and satisfactory manner, by recollecting that as the indigo or the madder passed on from the lacteals to the thoracic duct, it became successively diffused through a larger quantity of chyle, and therefore it was a very obvious and necessary consequence that the colour communicated to the chyle should become constantly fainter, until finally it was completely lost. A satisfactory illustration of what we mean is at the command of every person. By dissolving a portion of indigo in a small quantity of milk or water, it will be found to give to these fluids a very deep tinge. By adding successively however of the milk or water, the colour will gradually fade, until at last it will be scarcely perceptible. Precisely in this way do we account for the fact mentioned by Dr. Chapman.

We have thus briefly stated what appear to us unanswerable objections to our author's argument concerning the "uniform identity" of the chyle.

A second argument of Dr. Chapman's against the doctrine that medicinal substances are taken into the circulation, is, that if such were the case, it would be attended with the most fatal effects upon the system, inasmuch as the mildest fluids cannot be injected into the blood vessels without destroying life. That his reasoning may be perfectly understood, we shall quote his

own language: "It must be acknowledged," says he, "that no substance, in its active state, does reach the circulation, since it is shown, that a small portion even of the mildest fluid, as milk or mucilage, oil or pus, cannot be injected into the blood vessels, without occasioning the most fatal consequences. Twenty-two years ago, in conjunction with my friend, the late Dr. George Lee, then resident in the Pennsylvania Hospital, I instituted a series of experiments to this purpose. All the articles enumerated above were tried in succession, together with some others of an acrid and stimulating nature, on dogs and cats, the animals selected on the occasion. But diversified as these substances are, we could discern no material difference in their effects, the whole seeming to act merely as extraneous matter in *error loci*, producing, at first, great distress to the animal, as was indicated by its movements and cries, followed by difficult panting, respiration, vomiting, and purging, nervous tremors, convulsions, and death. Experiments very analogous to the preceding have recently, I understand, been made by Professor Caldwell, and with confirmatory results. That the late inquiries of Sir Everard Home and others lead to a different conclusion, I am aware. Confiding, however, in the accuracy of our own observations, I must, in the present state of the question, still maintain, without the slightest qualification, the position I have assumed."—vol. i. p. 64, 65.

Before we proceed to the examination of this argument, we cannot help expressing our regret that the experiments to which Dr. Chapman alludes, as having been performed in Philadelphia, should differ so widely from those conducted in other parts of the world, because it serves not merely to shake our confidence in men upon whom we have been in the habit of looking as able and accurate experimentalists, but also to weaken our faith in the accuracy of the experiments of Dr. Chapman himself. For assuredly, if Sir Everard Home, Majendie, and others, who have devoted their lives to these investigations, are not to be depended upon, we may be forgiven, we think, for cherishing a little scepticism concerning the in-

fallibility of Dr. Chapman or Dr. Caldwell. Without intending to impeach in the least the correctness of our author's experiments, it is impossible for us to get rid of the mass of opposite testimony, which we find recorded, on authority too respectable to be despised. Independent of those reported by Home and Majendie, there are many other facts to prove, that medicines introduced into the blood-vessels may prove not merely innocuous, but even salutary. By referring to some of the early volumes of the Transactions of the Royal Society of London, Dr. Chapman will find several cases related, in which patients were cured by medicines thus introduced into the system. Admitting, however, for the sake of argument, the objection of Dr. Chapman to its fullest extent, we cannot perceive that it has much force. Supposing that medicinal substances, when injected into the blood-vessels, do produce such deleterious effects, it does not seem of necessity to follow, that similar consequences should result from them, when introduced into the circulation, through the medium of the stomach and lacteals. On the contrary, the difference in the two modes of introduction, seems so great as really to destroy all analogy between them. In proof of this, it need only to be mentioned, that the chyle, the natural fluid circulating through the lacteals, will, if injected into any of the blood-vessels, produce effects precisely similar, and equally injurious with any of the foreign substances alluded .to by Dr. Chapman. Hence, the conclusion is inevitable, that substances may pass innocently into the system through *the lacteals* which would be succeeded by the most deleterious consequences if introduced directly into *the blood.* And if so, our author's argument falls at once to the ground. We might here enlarge, for the purpose of showing how wide a difference there is, in the *manner*, in which substances enter the circulation in the two cases, but we think this must be so obvious to every person of reflection, that we shall remain silent on the subject, and pass on to the next argument of our author.

A *third* objection of Dr. Chapman is couched in the fol-

lowing language: "Conceding, however, to the humoral pathologists all that their doctrine demands, still *insuperable difficulties* remain in the way of its adoption, to account for the operation of medicines. Not to dwell tediously on the subject, I shall content myself, at present, with little more than mentioning, that we are not at all informed by it, why our remedies, after mixing with the blood, should be directed to one organ in preference to another, as mercury to the salivary glands, or how indeed they operate at all."—vol. i. p. 65. Now, we cannot see what Dr. Chapman gains by this objection, for it applies with quite as much force to his own theory. He tells us indeed that medicines are directed to particular parts of the system "through the medium of sympathy;" at the same time confessing that "of the *manner* in which impressions are extended, as well as of the *cause* of the more intimate consent of parts, we are not, perhaps, accurately informed." If, therefore, Dr. Chapman's own theory is confessedly inadequate to the explanation of this phenomenon, we have yet to learn by what rule of sound logic he is justified in raising this objection against another theory.

After all, we cannot see any of those "insuperable difficulties," in explaining this subject, which appear to weigh so much upon the mind of Dr. Chapman. That every organ in the body has its peculiar and appropriate stimulus, by which it is excited into action, is so universally admitted as to require no process of reasoning to establish it. Our author concedes it, and indeed it forms the basis of his classification. Hence it follows that certain medicines, when introduced into the system, act upon particular organs, leaving the rest more or less unaffected. If this be so, then there can be little difficulty, we think, in conceiving that a substance dissolved in the blood may circulate through the system, without producing any particular effects until it reaches the organ upon which, from its peculiar properties, it is designed to operate. The reason *why* a medicine acts upon one organ, in preference to all the other organs of the body, why jalap, for instance, operates upon the intestines and not upon the brain and lungs, we can no more explain than

we can the reason *why* the planets are kept revolving in their orbits. If we are told that the movements of the planets are the result of attraction, so we may say that the determination of medicines to certain organs is occasioned by a similar kind of attraction. This however explains nothing, and we must after all be content with the broad *fact*, that such phenomena do occur, and that they are governed by certain laws; but the *cause why* they occur must ever remain concealed. Upon this ground, we think Dr. Chapman is asking too much to require that we should assign the cause "*why* remedies, after mixing with the blood, should be directed to one organ in preference to another." All that the most rigid disputant can reasonably demand or expect from us, is to prove, in the first place, that medicines are actually taken up into the circulation; and in the second place, that they afterwards act upon particular parts of the system. The latter is admitted on all hands, and the former rests on proofs too solid to be shaken.

A *fourth* objection of our author's is, that "by the *medication* of the blood, were it possible, as is contended for, we must in all instances do harm. The whole mass of circulating fluids is equally charged in this case with the medicinal substance, and therefore, while an action is going on in a diseased organ, which may be salutary as to it, every sound part of the system becomes subjected to a similar impression, which could not fail to disturb the order of health, and create morbid derangements."—vol. i. p. 65, 66.

All this is purely hypothetical. It is founded upon a supposition entirely erroneous, which is, that a medicine cannot act upon one part of the system to the exclusion of the rest. In what we have already urged, we have in fact so fully replied to this argument, that we deem it unnecessary to enter into any recapitulation.

We have thus considered all the material objections of Dr. Chapman, against what he chooses to call "a relick of the humoral pathology." Aware of the strong support which this "relick" receives from indisputable facts, he endeavours to ex-

plain them away in a manner equally singular and original. That we may have before us the full scope of his reasoning on this point, we shall quote him at length. "That some of the properties of certain articles are displayed," says he, "in the secretions and excretions, I am not disposed to deny. But it does not hence follow, that these substances entered the circulation in their primitive state. Directly the reverse, indeed, seems to be proved, as no one of them can be detected in the serum of the blood. To me it is clear, that the process of assimilation, as performed either by the chylopoietic viscera, or by any part of the absorbent apparatus, completely *decomposes* all substances; and, however discrepant in their properties, reduces them to a homogeneous fluid fitted for the purpose of nutrition. But, when thrown into the secretions or excretions, being removed beyond the control of the vital energies, chemical affinities are sometimes again brought into play, by which these substances are in part, or wholly regenerated. No slender support is given to this hypothesis by the well-known fact, that matters are found in such positions, which had not previously existed, in any cognizable state, in the blood. Thus, certain articles can only be detected in certain fluids, as the odour of garlic in milk, of asparagus in urine, of sulphur in the perspiration, and the colouring principle of madder is to be traced in no part of the solids, except the bones, and their immediate appendages, the cartilages. Did these articles pre-exist in the blood, instead of being regenerated in some such manner as I stated, ought they not to be thrown out indiscriminately by all the enunctories?"—vol. i. p. 63, 64.

The most sturdy of the humoral pathologists, we think, could not wish Dr. Chapman to concede more than he has actually done, in the foregoing paragraph. He admits that certain substances are carried into the circulation, and that they display their peculiar properties in the secretions and excretions. But says he, they do not enter the circulation, "in their primitive state;" they are reduced by the "process of assimilation," and thus enter into the circulation, and when thrown into the secre-

tions and excretions, by the "play of chemical affinities, they are again, wholly or in part, regenerated." Let us analyse this explanation, and see what it amounts to. We are told that sulphur, taken internally, exhibits itself in the perspiration. According to Dr. Chapman's solution of this fact, the sulphur, before it is taken into the circulation, is reduced in some way, so as to deprive it of all its characteristic properties, and when thrown out upon the skin by the "play of chemical affinities," is again regenerated and exhibited in the form of sulphur. To this explanation, objections of so strong and obvious a character present themselves, as to render it wholly inadmissible. We know nothing of sulphur, but as a *simple* substance, and Dr. Chapman ought to prove that it is *capable* of decomposition, before his explanation will hold good. Let us take another illustration. Nitrate of silver, taken internally, frequently produces permanent discolouration of the skin. Cases of this kind are on record,* and we presume will not be disputed. Dr. Chapman would argue, that the nitrate of silver is first decomposed into its elementary ingredients, and afterwards regenerated on the surface. The nitrate of silver then would be decomposed into nitric acid, and an oxide of silver: the nitric acid again would then be decomposed into oxygen and azote; and the oxide of silver into oxygen and the pure metal. Further than this it is impossible to decompose them. Here, then, according to Dr. Chapman's own explanation, we have silver, a large quantity of oxygen, and azote, which must all enter into the blood in their separate and uncompounded state, or else it is impossible for the nitrate of silver to be formed afterwards upon the surface. It is evident, that this solution multiplies the difficulties which it was intended to remove. According to it, instead of *one*, we have actually *three* foreign substances entering into the blood. Dr. Chapman certainly could not have been aware of the consequences of his own doctrine, or he never would have urged it so boldly. Again; the colouring principle of madder, which is found in the bones, Dr. Chapman tells us,

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* See Medico-Chirurgical Transactions of London.

is decomposed by the chylopoietic viscera, and again regenerated in the places where it is detected. Now, before we admit this, it must be proved that this colouring principle is capable of being decomposed. This, we think, would be rather a difficult undertaking. Admitting, however, that it might be decomposed, it would be no less difficult to show that it could afterwards be regenerated. Vegetables undergo *destructive* decomposition, and can never be regenerated by the art of the chemist, or by any play of chemical affinities. In every point of view, therefore, the explanation of Dr. Chapman is wholly inadmissible; being inconsistent with itself, and contradictory to known and acknowledged principles.

But, says our author, "did these articles pre-exist in the blood, instead of being regenerated in some such manner as I have stated, ought they not to be thrown out indiscriminately by all the enunctories?" We answer no. Such a consequence no more follows than that all the glands of the system should secrete precisely the same kind of fluid. With just as much propriety might it be asked, why the liver does not secrete milk, or why the stomach does not secrete urine. The truth is, every secreting organ is destined to separate from the blood a *peculiar* substance, and hence it is perfectly plain why foreign matters, circulating in the blood, are not "thrown out indiscriminately upon all the enunctories."

Having given his objections to the doctrine that medicines ever enter the circulation, our author proceeds to explain his own theory of the *modus operandi* of medicines.

"It results, on the whole, from what I have said, that we are to reject the fluids altogether in our inquiries relative to the operations of medicines; because in addition to the reasons already stated for doing so, we have in that law of the animal economy, termed sympathy, or consent of parts, a solution of the problem, which comports infinitely better with the existing state of our knowledge.

Conformably to the theory I have adopted, whenever a medicinal substance is applied to a susceptible portion of the body, externally or internally, an action is excited, which is extended

more or less, according to the diffusibility of the properties of the substance, or the degree of sympathetic connexion, which the part may maintain with the body generally. Thus a set of actions is raised, every one of which is precisely similar, provided they are confined to the same system, by which is to be understood parts of an identity of structure. If, however, the chain runs into other systems, it loses its homogeneous character, the actions being modified by the peculiar organization of the parts in which they may take place. These are principles of universal application. In every case, whether it respects the operation of remedies, or the production of disease, the spot primarily acted upon, is a point from which is diffused the radiated impressions."—vol. i. p. 70, 71.

It may easily be gathered from the sentiments which we have already expressed, that we do by no means subscribe to this theory. Like most sweeping generalizations, it is altogether too exclusive, and fails to account for the operation of a very large portion of medicinal substances, which seem to act upon a principle entirely different. We want no better proof of the inadequacy of this theory, than Dr. Chapman's own work. Take for instance, what he says concerning the Oil of Turpentine. In treating of the virtues of this article in correcting the lithic diathesis, and relieving nephritic pains, he adds, "on what principle it operates is not very intelligible, though it would seem that its appearance in the bladder is necessary to its success. I am told by Dr. Physick, to whom I owe much of the information which I possess on the subject of this article, that whenever it has failed with him, the *violet odour* was wanting in the urine."—vol. i. p. 343.

It is very plain that Dr. Chapman here abandons his own theory; for if the doctrine of sympathy could explain the operation of the turpentine, why is he forced to confess that the "principle on which it operates is not very intelligible?" Nothing can be clearer than that sympathy, at least as explained by our author, has nothing to do in this case. The fact speaks for itself. The turpentine must be taken into the circulation,

and afterwards act directly upon the urinary organs, or else the *violet odour* could not be detected in the urine. Here, then, is at least one clear and pointed exception to Dr. Chapman's theory.

Let us take another illustration. In discussing the general action of "Lithontriptics and Antilithics," we are told that the possibility of dissolving a stone in the bladder by a course of medicine rests upon two grounds, one of which is the following, viz. " that some of these solvents do reach the urinary bladder, without any, or, at least, a material change being wrought in their properties, so that, when coming in contact with the stone, there might be a play of chemical affinities, and hence a decomposition of the calculous body."—vol. i. p. 322. Now, here is an unqualified admission, of not a *single* medicine, but a *whole class* of medicines acting upon principles purely *chemical.* In so far, therefore, as this class of remedies is concerned, it cuts short the doctrine of sympathy, and proves beyond a doubt, that the unlimited manner in which that doctrine is maintained by Dr. Chapman is wholly untenable. No " sympathetic actions," nor " associated motions," nor " radiated impressions diffused from a point," can ever dissolve a stone in the bladder, or account for the varied appearance of the urine, resulting from the use of internal remedies.

Another exception to our author's theory may be found in the list of Anthelmintic medicines, a large portion of which are admitted to act by their poisonous properties upon the animal. But we will not push this subject any further. Enough has been adduced to prove, that the doctrine of sympathy can only be admitted with such large qualifications and exceptions, as to overturn completely the theory of our author, that medicines uniformly and universally act upon this principle alone. We hope we shall not be misunderstood. In explaining the operation of medicines, we do by no means deny altogether the agency of sympathy, or some principle very similar to it. To contend, that all medicines act through the medium of the circulation would, in our opinion, be not less contradictory to reason and fact, than the doctrine which we

are combating. We do not believe in this wonderful simplicity of nature, which has been so favourite an argument with every theorist who has attempted to explain the intricacies of a whole science upon *one* general principle. Dr. Chapman, for instance, tells us, that "to multiply causes superfluously is against one of the fundamental rules of philosophising, and is not less repugnant to the general course of nature, whose means are proverbially distinguished by great simplicity and uniformity." This is true indeed; but then it is equally unphilosophical, not to assign causes sufficient to explain known and acknowledged phenomena; and as it regards the present case, it rests with Dr. Chapman to show that by calling in the aid of the circulation we multiply causes unnecessarily. An excessive fondness for simplification has been the bane of medical science. It was this which led Brown to maintain the absurd doctrine that all medicines were stimulants, the only difference between them being in the force and rapidity with which they exercised their stimulating powers. It was this which prompted Dr. Rush to defend the strange notion of the unity of disease, and it is this which induces Dr. Chapman to contend for the exclusive agency of sympathy, in explaining the operation of medicines. Wanting, as they all do, the broad and substantial basis of truth and philosophy upon which to rest, it is impossible that their influence should be other than transient and ephemeral. The theory of Brown has long since been abandoned. The unity of disease, notwithstanding the zeal, and talents, and eloquence with which it was defended, was falling by its own weight, even before the death of its illustrious author. And it requires not the spirit of prophecy to predict that a similar fate awaits the theory of Dr. Chapman.

But we have dwelt long enough upon this part of our author's work, and we hasten to a brief notice of some other portions of it.

In treating of the general effects of medicines, and after telling us that "he holds all medicines to be stimulants," Dr. Chapman takes occasion to give us a definition of the terms

stimulant, and *sedative*, which does not appear quite so satisfactory as we could have wished. " As, whatever produces," says he, " any positive impression on the living system, does it commonly by an incitant power, there can be no doubt that, in a very strict sense, most medicinal substances are stimulants. But the effect thus created may be inferior to the natural degree of excitement, and much less than that of disease. When this happens, as lessening action, the article may, with propriety, be demonstrated, and in a practical view considered, sedative, in contradistinction to our more energetic remedies."

This language is certainly not very clear; but if we do not strangely misconceive it, it goes evidently to support the belief of the existence of medicines which are directly sedative. That Dr. Chapman did not mean to convey this idea, we take for granted, from his having stated just before that he considered all medicines to be stimulants. We object merely to the want of precision in the language, which is the more to be regretted, because it is a subject of which Dr. Chapman himself tells us that " the discussion, which has so long been maintained on this point, is really little else than a dispute about words."

It is impossible for us to enter into a particular review of every portion of Dr. Chapman's work, and indeed we consider this the more unnecessary because it is, or ought to be, in the hands of every American physician. The chapters on " the practical application of Emetics and Cathartics," we consider as among the most valuable and interesting portions of it. They are rich in suggestions of practical import, and we would especially recommend them to the notice, not merely of the student of medicine, but of the practitioner.

On the subject of Emmenagogues, we are presented with a discourse equally interesting and instructive, although the theoretical notions which it inculcates in favour of the menstrual discharge being a *secretion*, are liable to many serious, and, as we think, unanswerable objections.

Under the head of Opium, Dr. Chapman speaks of the use of this article in catarrh, and gives it the following recommen-

dation: "*Novel* as the remedy I have suggested in catarrh may seem, it is not without the support of experience. I have tried it on hundred times on myself, and still oftener with my patients, so that I can hardly be deceived. Taken on going to bed, which it should be, it soon excites an universal and equable glow over the system, attended with little or no perspiration, and I am not aware that any advantage is gained by uniting with it a diaphoretic. It probably operates here simply as a diffusable stimulant, overcoming, by its superior powers, the feeble action of the incipient stage of the disease. Delayed till the attack is confirmed, opium becomes mischievous, and we can only hope to subdue it, if violent, by calling into requisition the depletory and antiphlogistic measures."—vol. ii. p. 209.

We have extracted the foregoing passage, because it touches upon a subject extremely interesting; but more especially because it would seem, from the language of our author, that he intended to convey the idea that the practice here recommended is original. Dr. Chapman may not have been indebted to any one for the suggestion; but it is not less certain, that the very same practice was recommended, upwards of forty years ago, by Mr. Mudge, in his treatise on "A radical and expeditious cure for a recent catarrhous cough,"* &c. &c. It must be admitted, that in addition to the opium, Mudge considered the inhaling of warm steams into the lungs as essential to the cure. As regards the opium, however, the practice is radically the same, and he subjoins a caution similar to that given by Dr. Chapman, that it is to be used only in the *commencement* of the disorder.

We are aware that our remarks have already extended themselves too far, and we shall bring them to a close, after having corrected an error into which our author has inadvertently fallen, in his discussion on the subject of Iron. "Experiments exceedingly numerous," says he, "and well contrived, which were originally made by Dr. Edward Wright, and subsequently re-

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* Duncan's Medical Commentaries, vol. iv. p. 150. Am. ed.

peated by Dr. Hodge, a graduate of this University, under every circumstance of care and attention, demonstrate, that *none of the preparations of this metal* can be detected even in the chyle."—vol. ii. p. 461. Of Dr. Hodge's Experiments, we know nothing. But the statement concerning Dr. Wright, is not quite correct. In the eleventh volume of the abridged Transactions of the Royal Society of London, we find an account of an experiment made by Edward Wright, M. D. from which it appeared that salt of steel does not enter the lacteal vessels. In the same paper, however, Dr. Wright admits that the accurate experiments of Menghini, in the memoirs of the Bononian Academy, sufficiently prove, that the ore and filings of iron, finely levigated, enter the blood in considerable quantity, as does also the crocus, calx, or earthy part of the metal, though in less quantity than the two former, which were found to act with a violent stimulus on the vessels, and to have dissolved and broken the crasis of the blood of different animals that had used them, for some weeks, in large doses, mixed with their ordinary foods. He moreover refers to the experiments of Lister and Musgrave, to prove that particles much grosser than those of white chyle, provided they be not astringent or very acid, are conveyed by the lacteals. The reason which he assigns for the salt of steel not entering the lacteals, is its great astringency, by which their mouths are so constricted as to prevent them from taking it up.

To some of our readers it may appear strange that after the high encomiums which we passed upon the Therapeutics of Dr. Chapman, at the commencement of this article, we should have devoted almost the whole of it to an exposition of what we conceived to be some of its errors and deficiencies. A very little reflection will, however, we think, render the cause perfectly obvious. The errors of men of genius are peculiarly dangerous. Coming to us, as they do, recommended by all the fascinations of taste and eloquence, their influence is proportionably extensive and commanding. Over youthful and inexperienced minds, especially, they bear a sway which not unfrequently sets

reason herself at defiance. It is for this cause that we have thought it our duty to interpose some objections to the reasonings and theories of our author. Entertaining, as we do, the very highest respect for Dr. Chapman, it would be to us a source of the most unfeigned regret, should a single word that may have dropt from us, be construed as savouring of disrespect or hostility. So far from this being the case, circumstances, which it would not be proper to mention in this place, have inspired us with sentiments of the kindliest regard, and it is with no false or deceitful pen that we wish him all the prosperity to which his character, his talents, and his labours in the cause of science so pre-eminently entitle him. B.

ART. II. MEDICAL DISSERTATIONS ON HEMOPTYSIS, *or the Spitting of Blood, and on* SUPPURATION, *which obtained the Boylston premiums for the years* 1818 *and* 1820. By JOHN WARE, M. D. Fellow of the Massachusetts Medical Society. Boston: Cummings & Hilliard, 1820. pp. 95.

THE subjects treated of in these Dissertations are of a very interesting nature, and, generally speaking, are managed in a way very creditable to their author. This, however, is not our only, nor in fact our principal reason for noticing them. We wish especially to recommend them to public notice, as the offspring of a patronage extended to science which has hitherto been very uncommon in this country, but which we hope, ere long, to see more extensively imitated. There is nothing of which science in the United States stands so much in need as encouragement and patronage. We have talent, and ingenuity, and industry, and activity in abundance, and were appropriate inducements held forth, it would be found that the products of American intellect would very speedily rival those of the most cultivated nations of the old world. Entertaining such opinions, we should not be true to ourselves, did we not applaud every act of private as well as public liberality that may be directed

to the evolution of *native* talent, and the reward of *native* industry. On this account we feel pleasure in recording upon our pages, the name of WARD NICHOLAS BOYLSTON, of Boston, a liberal patron, to whom medical science will long feel itself much indebted.

This gentleman, several years ago, made an appropriation of a sum of money, the interest of which was to be distributed, in the form of prizes, to the authors of the best dissertations on subjects connected with medicine. This fund, we understand, is under the superintendance of Harvard University, and for the purpose of examining the dissertations and adjudging the premiums, a board of learned and respectable gentlemen has been constituted. Of the dissertations which have in successive years gained this prize, several have already been published, which are highly honorable to their respective authors. Dr. Ware, it appears, has been so fortunate as to receive more than one of these prizes. One of the dissertations before us gained the prize in 1818, and the other in 1820. The first of these, namely, that on the subject of Hemoptysis, is we think the best of the two, and we shall accordingly present our readers with a brief abstract of the doctrines which it inculcates. After some general observations on the peculiar liability of the lungs to disease, Dr. Ware takes up the consideration of the proximate cause of Hemoptysis, and discusses the different theories which have prevailed on this subject. The most popular opinion is that which attributes it to a rupture of the pulmonary vessels; the technical name given to this kind of hemorrhage is *rexis*. Another theory ascribes it to an erosion of the vessels from some existing acrimony of the fluids; this has received the name of *diabrosis*. A third considers it to result from a transudation of the blood through the membranes of which the vessels are composed; this has been called *diapedesis*. While, by a fourth theory it is presumed to originate from *anastomosis*, or a simple dilation of the orifices of the extreme vessels.

Rejecting the three first of these opinions as altogether inadequate to explain the phenomena attendant upon hemorrhage

from the lungs, our author adopts the last as agreeing best with "both physiological and pathological observations." As observed by our author, this doctrine is not new. It has received the sanction and support of many eminent physiologists and physicians. Among these the most distinguished is Bichat, and the ingenious reasonings of this author on the subject are given at length by Dr. Ware; in addition to which he has furnished some observations of his own, which go to support the doctrine for which he contends. It is not our intention to go into an examination of the merits of this theory. Our limits would not permit us, even if we felt so disposed. We shall merely state, that although some very obvious objections may be urged against it, yet, upon the whole, it is supported by a train of facts and arguments the force of which it would not be very easy to destroy.

Our author next proceeds to consider the *remote causes* of Hemoptysis. A plethoric state of the system, he thinks, has less to do in the production of this disease than has commonly been supposed. "Hemorrhage," he admits, "is doubtless sometimes occasioned by plethora, but not commonly; and hemoptysis seldom." It seems to depend more upon a plethora of certain organs, than of the system generally. "An abundance of blood in the body will not be apt to produce hemorrhages if it be equally distributed and properly balanced. It is only when the balance is destroyed that injury ensues; and although this is perhaps more easily done in a plethoric habit, yet it may take place under any circumstances, and produce the same effects."

The predisposition to hemoptysis Dr. Ware considers as pretty much the same with a predisposition to phthisis, and when such predisposition exists, hemorrhage from the lungs may be excited by any cause which increases the circulation in the system generally, or in the lungs in particular. Among the former are enumerated exposure to great external heat, as in manufactories, glass houses, &c. all violent straining, or exercise of the muscles, as in running, jumping, and walking for a long time. Among the latter, public speaking or singing,

shouting loudly, playing on wind instruments. The suppression of accustomed discharges, as the catamenia, piles, &c. are also mentioned among the causes of this complaint.

Our author next details the *symptoms* of this disease.

"In whatever manner hemoptysis is occasioned, it generally comes on with very nearly the same symptoms. The discharge of blood is preceded by a weariness and lassitude affecting the organs of motion, a shivering sensation and constriction of the skin—by a coldness of the extremities—a sense of weight or anxiety about the precordia—a slight degree of pain in some part of the chest—a sensation of heat or of burning under the sternum—and by a shortness and difficulty of breathing increased by moderate exercise. These symptoms may have existed for a longer or shorter time before the hemorrhage occurs, but sometimes it comes on suddenly without any such warning, the flow of the blood being the first symptom observed. This is said frequently to be immediately preceded by a saltish or brackish taste in the mouth, the cause of which, if it be any thing more than the fancy of the patient, is probably owing to a sympathy of the organ of taste with the diseased part. A slight tickling is felt at the top of the windpipe, which excites a coughing to relieve it. This brings up the blood from the lungs, of a florid, arterial colour, and of a frothy appearance, at first in a small quantity, but the irritation continuing, more is brought up in the same way, with a rattling noise in the windpipe, as of air passing through a fluid. In some instances, only a few mouthfuls are thrown up, before the hemorrhage ceases; in others, a slight spitting continues for several days together, and sometimes, especially when it has repeatedly occurred, it is in great quantity, and the blood is thrown out so copiously, that the patient seems rather to be vomiting than coughing it up. It is seldom that the hemorrhage is so abundant as to cause death either by suffocation or exhaustion. It generally ceases spontaneously, when sufficient blood has been poured out to relieve the vessels of the lungs; or it is checked by the use of remedies."—pp. 22, 23.

In the *treatment* of Hemoptysis, blood-letting is recommended as the first and most important remedy. We are happy to find that Dr. Ware does not restrict the use of blood-let-

ting to vigorous constitutions, or plethoric habits. His opinions on this subject accord so fully with our own, that we cannot help extracting them.

" Writers in general," says he, " have recommended to confine its use to strong and plethoric habits ; but I do not see why this should be thought to make so much difference. Do we find that those of weak and slender habits are more debilitated by bleeding than those who are stronger ? At any rate, are the bad consequences of the operation so grave and dangerous as those which ensue from hemoptysis ? And does it not as often prevent these consequences from taking place in those who seem to have no blood to spare, as in those who are full of it. If they are not able to bear the operation of the remedy, they are still less able to support the disease. It may be said that our opinions are derived from theoretical views with respect to the nature of hemorrhage ; but is it not theory which restricts bleeding to those who are in vigorous health ? We ought undoubtedly to have some regard to the power of the system to repair the loss of blood : There are certainly cases in which this remedy is improper ; but in any subjects, with respect to whom it would be adopted, were they attacked with inflammation of the lungs, there seems to be no danger in resorting to it in hemoptysis."—vol. i. p. 29.

This is sound and wholesome doctrine, and if it had been acted upon more generally than we fear it has been, might have saved many a valuable life to the community.

After blood letting, *emetics* are next recommended, and our author appears to set a high value upon them. " Of their great importance," he says, " there is no doubt, and they seem to be called for in the majority of cases. They may be useful in two ways : first, when the stomach is deranged either from previous disorder, or from the attack itself, by putting it in good order ; for the system never acts to advantage under any difficulty if this is not done ; and secondly, by the sympathetic operation which vomiting has upon the capillary circulation of every organ, particularly of the lungs and skin."

The state of the *bowels* is particularly to be attended to. As

cathartics, the neutral salts, as operating with least irritation, are specially advised. In cases where the pulmonary affection is combined with some disorder of the digestive organs, it may be necessary to give the preference to other substances.

The use of *astringents*, in this disease, Dr. Ware tells us, is "indicated principally in those cases where bleeding and the other measures employed do not succeed; where any particular circumstance prevents their employment; or where the effusion of blood is so sudden and profuse as to cause the immediate loss of life from hemorrhage." The mineral astringents are the most powerful, and are generally used. Among these, the best are the acetate of lead, the sulphates of zinc and of copper, the super sulphate of alumina and potash, and sulphuric acid.

Exciting counter-irritation by means of *blisters*, *setons*, or *issues*, is highly commended in cases where the spitting of blood continues, at short intervals, for some time, accompanied by a slight dry cough, pain in the side, and across the chest, and shortness of breath. In these cases Dr. Ware thinks counter-irritation, by the means already mentioned, "becomes a remedy of great power, and is perhaps the most certain we can employ."

Of the use of Digitalis in Hemoptysis, our author speaks in the following terms:

"Digitalis is an article well worthy of a trial, in cases which do not yield to the measures already recommended. Though far from doing good in a majority of instances, it is in some of such evident advantage, that one would hardly feel justified in omitting its employment where the usual remedies had failed to check the hemorrhage, or where serious symptoms of pulmonary disease continued, after the violence of the first attack has been subdued. I know of no particular circumstances by which we are enabled to distinguish the cases in which this remedy will be of service, though such a power of discrimination would be of great value. On subjects, to all appearance affected in the same way, it produces entirely different effects, without affording any clue to the principle on which this difference is founded. It is possible, that it may

have some connexion with the very marked and powerful influence possessed by Digitalis over the lymphatic system, in Dropsy." p. 33.

One of the best parts of Dr. Ware's Essay is that which relates to the liability of public speakers, and especially the clergy, to hemoptysis. His observations on this point are so judicious, and furnish so favourable a specimen of his manner of writing, that we shall quote him at some length. The importance of the subject, we hope, will excuse us for so doing.

"I allude to public speakers, especially those of the clerical profession. The many and valuable lives which have among us fallen apparently a sacrifice to the duties of this profession, have given to the subject a painful degree of interest. So little can be done with the hope of restoring those who have once suffered from hemoptysis with a tendency to phthisis, that it seems of the first consequence to ascertain what the exact circumstances are, in the life, habits, and duties of a clergyman, which render him peculiarly liable to such an attack, and to the consequences it brings in its train.

"The most obvious cause of this liability to pulmonary disease in clergymen, is the great and long continued exercise of the lungs, required in the performance of public worship. To this, as the peculiar duty of the profession, our attention is apt to be principally and almost exclusively devoted; we are too ready to consider it as a sufficient cause in itself, and to avoid examining the influence of other circumstances. It is not found that members of other professions, who are in the habit of exerting their lungs, are more liable than the average of mankind to pulmonary disease. We do not hear of any extraordinary proportion of deaths from consumption among lawyers, public actors, public singers, &c. We must therefore look to other circumstances in the mode of speaking, the life and habits of our clergy, for the causes of this tendency among them to affections of the lungs, and derive from our investigation the best methods of counteracting their operation, and of avoiding the fatal issue to which they lead.

"It has usually been admitted by physiologists, that the exercise of any organ, if not carried to an extraordinary or unnatural degree, and if it be in a healthy state, contributes to increase its strength, and renders it capable of sustaining an increased degree of labour

without injury. This, under some circumstances, is true of the lungs, though not to the same extent that it is with regard to the external voluntary organs. Public singers, and performers upon wind instruments, acquire by habit the power of exercising their lungs in a pretty violent manner for a length of time, to which at first they were totally inadequate. This partly depends, without doubt, upon the facility which they acquire of producing the same effect with a less exertion of strength; but it cannot be entirely attributed to this circumstance. A few moments will exhaust a beginner upon wind instruments; but almost any individual may gradually become able to play upon them for some hours without injury. Now, why is the case different with regard to the public speaking of clergymen, which certainly requires a much less violent exertion on the part of the lungs than either singing or playing on wind instruments? The reason I believe to be this, that the duties of the profession are only occasional, and occur at too great intervals to allow the formation of a habit; whilst at the same time they are sufficiently difficult to over exercise, fatigue, and exhaust the organ. They are from the first as long and as laborious as they will ever be, and there is no opportunity for that slow and gradual increase which enables one to acquire strength and facility of exertion. In order to strengthen the general habit, or any particular part, by exercise, it is not necessary to begin with any unusual or extraordinary efforts; this is rather injurious, and defeats the object in view; but it is necessary to keep up constantly some effect from the exercise; to have the organ or the system under its regular and equable influence. It is only in this way that any benefit is to be derived from it in the treatment of disease. Occasional extraordinary exertion, carried to the point of fatigue, and then omitted until the fatigue is entirely removed, can only have the most injurious effect; and it is exactly in this way that the lungs are exercised in preaching. They are wearied by the services of the Sabbath, and are then suffered to remain perfectly at rest through the interval of the week.

But there are other circumstances which give force and certainty to the operation of this cause, and which act by rendering the system liable to become diseased in any organ to which the exciting causes may happen to be applied. They produce a general

state of predisposition to disorder, which becomes developed in the lungs, in consequence of the unnatural exertions which they are occasionally obliged to make, and would, under similar circumstances, be developed in any other organ. I refer to the habits of studying and living among the greater part of our literary men.

"They are, in the first place, accustomed to use but little exercise, and to devote a good deal of time to sedentary occupation. Their relaxation is too often of an inactive kind. Their exercise, if they are induced to attend to it at all, is seldom judiciously arranged; it is not regular and equal, but sometimes entirely omitted, and sometimes carried to excess. To the state of system produced by this inactivity, is added the effect of improper diet and improper quantity of food. In order to perfect health, it is necessary there should be a certain proportion between the demand for nourishment, and the supply provided. Other things being equal, the quantity of healthy exercise in the system determines the quantity of nourishment requisite for its necessities, and the quantity which the stomach can perfectly digest. If the exercise increase, the food must also increase; and *vice versa*. He, therefore, who leads a sedentary, and as it respects the body, an indolent life, does not require so much food, as one engaged in active occupation, and it is not necessary that it should be of so nutritious a quality. But the opposite course is in fact pursued by students. Their appetites, at least till they are become the subjects of disease, are not affected; or if so, are excited by delicacies or stimulants, and are indulged to an improper extent. The consequence is, that digestion is impeded; is performed for a while with difficulty and labour, then imperfectly in a greater or less degree, and, at last, almost entirely destroyed. This of course is the case with only a part of the individuals to whom I refer; the constitutions of perhaps a majority are sufficiently pliable to become accommodated to this manner of life sooner or later; but I apprehend I am correct in saying, that a great proportion of professional students in our vicinity, especially theological students, are affected, at one time or another, by some serious disorder of the digestive organs.—p. 35. 39.

Medical and Philosophical Intelligence.

DOMESTIC.

Removal of a portion of the inferior maxillary bone by an operation.—Dr. Mott of this city lately performed an important surgical operation, by which an entire section was made of nearly one half of the lower jaw-bone. The operation was had recourse to for the removal of a large Osteo-Sarcoma, which occupied so much of the mouth as to interfere very much with speech and mastication, and from its attachment to the velum palati and pressure upon the pharynx, impeded deglutition. The diseased portion of bone was removed from beyond the posterior angle to the side of the chin, the carotid artery having been previously secured by ligature. This operation was completely successful. The subject of it was a young lady, aged about 17 years, in other respects in excellent health, and of a good constitution. The particulars of this case will appear in a future number of this journal, accompanied with plates.

The use of Ergot in Uterine Hemorrhage.—We have just been informed by Dr. Hosack, that he has recently employed this medicine in a case of violent hemorrhage from the uterus, occurring after the cessation of the menses, with the most decided effect in restraining the discharges when all the ordinary astringents and other resources had been employed to no purpose. The medicine was exhibited in powder, in dosesof ten grains, three times a day. It produced a manifest action of the uterus, and an almost immediate check of the discharge. We are promised, for our next number, the particulars of this case, with additional observations on the use and abuse of this medicine.

Fever at St. Augustine, Florida.—We give the following particulars concerning the late fever which prevailed in St. Augustine:

they are derived from a source upon which reliance may be placed.

Nothing particularly remarkable occurred in the weather or the diseases incident to the place, prior to the commencement of the fever. About the middle of August, 1821, some cases of disease of a highly bilious nature made their appearance, and at the beginning of September they assumed a still more alarming and fatal character: the disorder was at its highest from the first to the fifteenth of October, during which period the greatest mortality prevailed. Towards the close of December the fever ceased.

The disorder attacked in an especial manner persons of a full and robust constitution; and without a single exception was confined to the new comers from more northern climates. It is stated that not a single individual from the West-Indies, or natives of the country, or any one who had previously suffered from yellow or malignant fever, became the victim to its influence. The fever was in a very striking degree characterized by all the leading symptoms of the yellow fever of the Northern states. It was marked with great prostration of the nervous system, and intellectual powers; it invaded suddenly, and generally terminated fatally within the second or sixth day from the attack; the peculiar yellow suffusion of the surface, as it is exhibited in yellow fever, was often observed, and that precordial anxiety, so uniformly noticed in the same complaint, was found to exist in a large majority of the cases of the fever of St. Augustine. In many cases the black vomit terminated the sufferings of the patient.

Forty or fifty deaths occurred principally among the new emigrants before the alarm became general. Eleven deaths was the greatest number that happened in any one day.

Of the inhabitants of St. Augustine, about two hundred is the full number that were exposed to the influence of the disease. Of this aggregate one hundred and forty were attacked, of which one hundred and thirty-two died. In these are included three blacks.

The disease also affected the troops in garrison, and forty deaths took place in a body of one hundred and twenty soldiers. The total number of deaths from this malignant fever was consequently one hundred and seventy-two.

In the treatment of this disorder, blood letting, which was had recourse to, but in a few cases, and at the commencement of the pestilence, invariably proved fatal. Calomel, when it could be prescribed so as to affect the general system and produce its action upon the mouth and gums, was servicable : but this salutary action was very rarely brought about, the patient dying before any evidence of mercurial excitation would be induced. In one instance where the salivary glands were affected it afforded no relief. The oil of turpentine was prescribed with advantage in several cases of deep gastric irritation.

Before the appearance of this fatal disorder, St. Augustine was noted for its uniform exemption from pestilential fever. A difference of opinion prevailed as to the origin of this malignant fever. Strong evidence has been brought forward that the disease was introduced from the Havanna, by the vessels *Alexander* and *Rapid* :—the first of which had lost her crew by yellow fever, and was brought in port by two passengers : the other had lost a part of her crew, and arrived at St. Augustine with persons who had died, and others sick of malignant fever.

American Flora.—We are happy to announce that a Flora of the Northern and Middle states is preparing for publication, by John Torrey, M. D. Vice-President of the Lyceum of Natural History, New-York, &c. This work will be comprised in two volumes, octavo, ornamented with plates, and will contain detailed descriptions, with synonyms, localities, &c. of all the plants hitherto discovered in the United States, north of Virginia. It will be published in numbers of 100 pages each. The first number will soon be put to press. The well-established character of the author for botanical and scientific attainments, affords ample assurance of the ability with which this work will be executed.

Report on the state of the New-York Hospital, for the year 1821.—The Report here inserted affords a full exposition of the state of one of our most efficient and important charities, and contains a brief but satisfactory account of the Lunatic Asylum, recently erected at Bloomingdale, by the munificence of the state, on a plan of unrivalled convenience and splendour.

The Governors of the New-York Hospital respectfully report, that in the course of the last year they have admitted 1658 patients, who, with 225 remaining on the 31st December, 1820, make 1883, who have received the benefit of the hospital during the year 1821. Of this number, 1543 have been cured, 111 relieved, 133 have been discharged at their own request, or that of their friends, and 23 as improper objects; 22 have eloped or been discharged as disorderly, 166 have died, 52 have been transferred to the Bloomingdale Asylum, and 133 remained on the 31st December last. The above statement includes 27 women, who have been admitted into the Lying-in Ward, during the year 1821; who, with 3 that remained there on the 31st December last, make 30. Of these, 23 have been delivered and discharged in health, 4 have been discharged at their own request before delivery, and 3 remain in the Ward undelivered: 24 children were born in the Ward during the year, (there being one case of twins,) all of whom left the Hospital in health, having been previously vaccinated.

The above number also includes 35 male and 25 female maniac patients, admitted in the year 1821, and previous to the 27th July in that year, when they were transferred to the New Asylum at Bloomingdale, and making, together with 38 males and 23 females who remained in the Old Asylum on the 31st December, 1820, 121 maniac patients, who have been under the care of the Institution at their old establishment, during the year 1821. Of these, 26 have been cured, 1 relieved, 27 have been discharged at the request of their friends, and 7 as improper objects, 3 have eloped, 5 have died, and 52 have been transferred to the Bloomingdale Asylum. Of the foregoing, there were 13 whose insanity was caused by the intemperate use of spirituous liquors. Beside the 52 maniac patients transferred as before mentioned, there have been received at the Bloomingdale Asylum since the 27th July, 1821, 75 males and 48 females; in all 123: of whom 19 have been cured, 7 relieved, 9 have been discharged at the request of their friends, and 3 as improper objects, 2 have died, and 83 remained on the 31st December, 1821. Of the foregoing 123, there were 19 whose insanity was occasioned by the intemperate use of spirituous liquors.

The whole amount of expenditures for the support and main-

tenance of the Hospital for the year 1821, is $23,033 24; and the receipts during the same year, including the annuity of $12,500 allowed bythe state, the sums received from the U. States, for sick and disabled seamen, from the several counties in the state, for the support of lunatic patients, up to the 27th July last, and all other sources of revenue, except the annuity granted for the erection of a building for lunatics, amount to $30,569 23; leaving a balance in favor of the Hospital of $7,535 99; which being deducted from $8,413 20, which the Hospital was indebted on the 31st December, 1820, leaves a balance against the Hospital, and for which it was indebted on the 31st December, 1821, of $877 21.

In 1816, the Legislature granted to the Governors an annuity for a term of years, to enable them to erect a building for the accommodation of lunatic patients, in which they might be enabled to employ the system of moral treatment which had been found efficacious in Europe, and which renders unnecessary much of that harsh usage to which such patients have generally been subjected. As this grant was made in trust for a particular object, the Governors have caused the accounts in relation to it to be separately kept. For the purchase and improvement of land, and for erecting and finishing the building, they have borrowed large sums of money at an interest of six per cent. and they have applied the annuity in part to pay the interest of that debt, and in part to form a sinking fund, which may finally discharge the principal. The cost of the whole establishment, including furniture, &c. has been $177,214 90; of which the sum of $165,000 is now owing by this corporation; and the amount of the sinking fund on the 31st December last was $21,257 26. The receipts and sums due for patients, since the new building was opened, have been $5,719 84 and the expenditures during the same period have been $7,637 23; but the latter includes the cost of many articles which will not soon require to be replaced; so that the ordinary annual expense cannot be accurately computed from that of the last six months. The building, which has been named the Bloomingdale Asylum, was opened in June last, but all the lunatic patients under the charge of the Governors, were not removed to it until in the month of July.

As the establishment is now complete, a brief account of its situation and management may not be unacceptable to the Legislature.

The building is of stone, three stories high, and about 211 feet long, finished in a style plain, but neat, and contains accommodations for about 200 patients. It is situated in one of the most healthful and beautiful spots on the island of New-York; commanding an extensive and variegated prospect. Annexed to it are about 70 acres of land, a portion of which is laid out in walks and gardens. The Trustees of Columbia College having presented to the Governors the plants that remained in the hot-house of the Botanical Garden, these have been placed in a proper building, and contribute to the embellishment of the place, and the amusement of the patients. With every local advantage, the Governors have commenced the system of moral treatment which the Legislature had in view when they provided for this institution; but without neglecting any of the aids which the science of medicine can afford. The medical department is conducted by a resident physician, who resides constantly in the house, and by an attending physician who visits it every week, and as much oftener as circumstances require. A superintendant and matron, respectable for their characters and deportment, have charge of the establishment, and the whole is superintended by a standing committee of the Governors, who visit it once a month, and of a sub-committee who visit it once a week. It is also inspected monthly by another committee, and monthly by the President and Vice President: and once in every three months there is a special visitation by the Governors, and such physicians, members of the city corporation, and other respectable citizens, as are invited to attend. By means of this perpetual supervision and inspection, abuses, if they should exist, cannot escape detection; and improvements are adopted whenever there appears to be room for them.

With a view to remove the melancholy train of ideas which, in many cases of insanity, take strong possession of the mind, salutary employment is provided for the patients; and when the weather and their health permit, they walk abroad in the garden and grounds, accompanied by the superintendant, matron, resident physician, or keepers. Tame animals have also been procured for them, as well as the means of other innocent amusements, such as ninepins, &c. They are permitted to dine together in classes, and their deportment at meals is much more orderly than might be expected. The utmost cleanliness is preserved, and nothing is neg-

lected which it is supposed will contribute to their health and comfort. The bible is occasionally read to them, and on the first day of the week, those whose situation will permit, are assembled to hear a sermon, or some portion of scripture. Some friends of the institution have made it a donation of books, and thus laid the foundation of a library, for the benefit of such patients as are capable of using it. All those means which experience has shown to be efficacious in removing or alleviating mental diseases, are sedulously employed.

It would not perhaps be fair to decide too positively upon the merits of the mode of treatment that has been pursued, from the result of only six months' experience ; but thus far it has not disappointed the expectations that had been formed of it. It has proved eminently successful, and particularly so with regard to the patients who were at first most violent and noisy : a large proportion of these are greatly improved, and sanguine hopes are entertained that many of them will shortly be restored to their families and friends, blessed with mental as well as bodily health. Among those removed from the Old to the New Asylum, were several whom it had been necessary to subject to constant personal restraint : this has now ceased to be requisite in every instance, except that of a single individual, who is the only patient that at present requires it.

The Governors indulge a lively hope that this establishment, so honourable to the state, will be no less serviceable to humanity ; that it will abridge the amount of human misery, alleviate the sufferings occasioned by one of the most deplorable maladies to which our nature is subject, and acquire for the Legislature which has founded it, the gratitude of posterity.

MATTHEW CLARKSON, *President.*

THOMAS BUCKLEY, *Secretary.*

New-York, Febuary 5, 1822.

UNIVERSITY OF THE STATE OF NEW-YORK.

At a meeting of the Regents of the University, held at Albany, on the 11th of January last, the following Promotions and Appointments were made in the College of Physicians and Surgeons in the City of New-York :

WRIGHT POST, M. D. President, in the room of SAMUEL BARD, M. D. deceased.

David Hosack, M. D. Vice-President, in the room of Wright Post, M. D.

Jacob Dyckman, M. D. and John B. Beck, M. D. Trustees.

At a subsequent meeting of the Regents, the following appointment was made in the College of Physicians and Surgeons of the Western District :

James M'Naughton, M. D. Professor of Anatomy and Physiology, in the room of Delos White, M. D. resigned.

University of the State of New-York.

College of Physicians and Surgeons, City of New-York.

Professors, agreeably to the ordinance of the Honorable the Regents of the Univerity, February, 1822.

Wright Post, M. D. President and Professor of Anatomy and Physiology.

David Hosack, M. D. F. R. S. Vice-President and Professor of the Institutes and Practice of Medicine.

William J. Macneven, M. D. Professor of Chemistry.

Samuel L. Mitchill, M. D. Professor of Materia Medica and Botany.

William Hamersley, M. D. Professor of Clinical Practice.

Valentine Mott, M. D. Professor of Surgery.

John W. Francis, M. D. Professor of Obstetrics and the Diseases of Women and Children.

Annual Commencement of the College of Physicians and Surgeons, City of New-York.

Agreeably to an ordinance of the Honourable the Regents of the University of New-York, the public commencement was held in the Hall of the College of Physicians and Surgeons, in the city of New-York, on the second day of April, 1822, when the following gentlemen were admitted to the degree of Doctor of Medicine, after having complied with the statutes of the University, and defended their respective Inaugural Dissertations.

Nova-Scotia.

1. Ebenezer Fitz Harding, *on the Management of the Placenta.*

Connecticut.

2. Rufus Blakeman, *on Melancholia.*

3. Stephen Middlebrook, *on Puerperal Fever.*
4. Henry Palmer, *on Dropsy.*

New-York.

5. Samuel Borrowe, Jun. *on Iritis.*
6. John Cadle, A. M. *on Mortification.*
7. John P. Emmet, *on the Chemistry of Animated Matter.*
8. Peter Forrester, A. B. *de Morbis Artus Genu.*
9. Nathan S. Jarvis, *on Angina Pectoris.*
10. Ferdinand Ludlow, *on Hydrophobia.*
11. Robert P. Macomber, *on Menstruation.*
12. Jotham W. Post, *on Diseases of the Hip Joint.*
13. David L. Rogers, *on Carotid Aneurism.*
14. Walter S. Smith, *on Emetics in Hysteria and Epilepsy.*
15. Lewis Traver, *on Hepatitis.*
16. Spencer Wood, A. B. *on Hereditary Diseases.*
17. Andrew Van Dyck, *on the Topography and Diseases of Kinderhook.*

New-Jersey.

18. John S. Condit, A. B. *on the Lachrymal Gland.*
19. Lewis D. Ford, *on Dysentery.*
20. Thomas L. Smith, *on Cataract.*

Virginia.

21. Horace Ames, *on the Phelgmasiæ.*

North-Carolina.

22. Bennet Boddie, *on the Functions of the Skin.*
23. Samuel Grier, *on Hepatitis.*
24. William H. Hunter, *on Dyspepsia.*

South-Carolina.

25. William E. Ellerbe, *on Urethritis.*
26. Aaron Lopez, *on the Importance of Nosology.*
27. David I. Means, *on the Momordica Elaterium.*
28. Edmund C. Park, *on Catarrhus Senilis.*
29. William Porcher, A. B. *on the indigenous Gentians of the United States.*

Georgia.

30. Fitzgerald Bird, *on the Sanguinaria Canadensis.*

UNIVERSITY OF THE STATE OF NEW-YORK.

College of Physicians and Surgeons of the Western District of the State of New-York.—Established at Fairfield, (Herkimer County.)

From a circular which has just reached us, we are happy to learn that this institution is in a prosperous condition. Sixty-two students have attended the medical lectures during the past winter, being a larger number, we believe, than that of any preceding year. From its connection with the University of the state, the decided disposition to patronize it, which the Regents have lately evinced, and from the character and talents of the professors, we augur very favourably of the ultimate success of this establishment.

The officers of the College are,

Hon. JOSEPH WHITE, M. D. President, and Professor of Surgery.

WESTEL WILLOUGHBY, M. D. Professor of Obstetrics.

JAMES HADLEY, M. D. Professor of Chemistry and Materia Medica.

T. ROMEYN BECK, M. D. Professor of the Theory and Practice of Physic and of Medical Jurisprudence.

JAMES M'NAUGHTON, M. D. Professor of Anatomy and Physiology.

At the late Annual Commencement held in this College, the degree of Doctor of Medicine was conferred on the following gentlemen, who had respectively attended two complete courses of lectures, and exhibited and defended a thesis, viz.

MARTIN L. BRYAN, Fairfield, Herkimer Co.
ALEXANDER BURNSIDE, York, U. C.
SAMUEL FOOT, JUN. Chautauque Co.
HEZEKIAH GATES, Oneida Co.
LESTER GREEN, do.
REUBEN H. HART, Saratoga Co.
LESTER HOLT, JUN. Otsego Co.
EBER W. HUBBARD, Jefferson Co.
JAMES W. MILLER, Montgomery Co.
DANIEL D. PAGE, Oneida Co.
JARED H. Parker, Onondaga Co.
ELISHA POWELL, JUN. Saratoga Co.
SOLOMON P. SHERWOOD, Middlebury, Vt.

Case of ligature on the external Iliac Artery.—The operation of tying the external iliac artery was performed by Doctor Alexander H. Stevens, in the New-York hospital, on the 12th of March last, upon a young soldier who was admitted that day with a punctured wound of the femoral artery, just below Poupart's ligament. He had been put under guard on the 30th of April ; and in attempting to pass the sentinel, received his bayonet on the outer and anterior part of the thigh. Profuse hemorrhage ensued, which was stopped by compression. It returned at intervals, until the time of his being brought to the hospital, when the limb was greatly swollen, and injected with blood—a firm coagulum plugged up the wound, and thin bloody serum oozed out of it. The skin around the wound was livid, and the man was in a state of high constitutional irritation. His pulse 136. The operator made an incision about two and a half inches long over the centre of Poupart's ligament, half an inch above, and parallel to it, except a slight curve upwards near its inner extremity. The layers of muscles were successively divided upon a director introduced under them. The peritoneum being then pushed up with the fingers, the sheath of the artery was laid bare, and cautiously divided. This part of the operation was rendered tedious by reason of the elevation of Poupart's ligament, and the effusion of blood into the sheath of the vessel. The artery being fairly exposed, the blunt needle of Drs. Parish, Hewson, and Hartshorn, was readily passed under it from within outwards, conveying a ligature of strong silk doubled. The operation lasted thirty-five minutes ; and the man expressed himself as more comfortable soon afterwards. The limb, with little artificial aid, preserved its natural temperature—occasionally becoming hotter than the other. On the twelfth day a slight pulsation was perceived in the anterior tibial artery. The ligature separated on the twenty-second day ; and after copious suppuration from the wound of the bayonet, the patient is now considered out of danger.

FOREIGN.

Vaccination in France.—In a critical analysis of a "*Report from the Central Committee of the Society for propagating Vaccination, on the number of children vaccinated in France, during the years* 1818, *and* 1819," by Dr. Granville,* some facts are stated of so interesting a nature, that we cannot deny ourselves the pleasure of extracting a few of them into this Journal.

The first of these facts relate to the irregularity observed in the progress of the pock after inoculation. Cases have been known to occur in which the pustule has furnished, after the fourth day, well-formed lymph, from which other children have been vaccinated, when the pustule was found to have lost that degree of precocity. Instances where the first appearance of the insertion having succeeded, manifested itself on the seventh, eighth, ninth, and as late as the thirteenth day, have occurred on various well-authenticated occasions.

It is now placed beyond doubt, that the vaccine matter will occasionally give rise to the spontaneous eruption of many more pustules in different parts of the body, the matter of which is perfectly good for inoculation. Of this fact we have ourselves been witnesses in more than one instance; and it goes far, in our opinion, to show that there is a general action produced by the vaccine virus on the constitution beside the local effect which arises from it.

Thirteen medical men have seen examples of vaccination proving the means of curing other eruptive diseases, the *crusta lactea* in particular; and it stands recorded in the present Report, upon unimpeachable authority, that the inoculated cow-pox has effectually cured scrofulous swellings, ophthalmia, chincough; and has appeared to exert a beneficial influence in cases of epilepsia, hemiplegia, and sciatica.

The Report is full of the experiments that have been repeatedly made, with a view to ascertain the efficacy of vaccination in subjects who were subsequently inoculated with the small-pox, or

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* London Medical and Physical Journal for November, 1821.

exposed to its contagion. The result has been uniformly favourable to the doctrine of the immortal Jenner. Four instances are detailed, of mothers attacked with small-pox, safely suckling their infants that had been vaccinated.

All the above facts, many of which have been observed before, were confirmed during the prevalence of varioloid epidemics, which have of late years partially ravaged some of the provincial districts of France. Mr. Lejeune, for instance, relates that in the village of Claye, (department of l'Aisne,) of thirteen children, one only, that had been vaccinated, resisted the small-pox, by which the other twelve were attacked, and of which four of the twelve died.

The influence which the cow-pox seems to exert over the small-pox, has been strongly illustrated in those individuals who, having been vaccinated after exposure to the variolous contagion, have experienced a disease extremely mild in all its characters.

The Report lays great stress on the comparative rarity of small-pox in places where vaccination has been much and generally practised."

The Report is signed by Chaussier, president; Corvisart, Delasteyrie, Doussin-Dubreuil, Hallé, Huzard, Jadelot, J. J. Leroux, Parfait, Pinel, Salmade, Duchanoy, Alibert, Bourdois, Guerbois; and Husson, secretary; and is followed by an ordinance of the minister of the interior, decreeing the distribution of one premium of 3,000, two of 2,000, and three of 1,000 francs each, to the individuals who most distinguished themselves in propagating vaccination; and the awarding of gold and silver medals, for the same reason, to upwards of two hundred persons, all of the medical profession, with one single exception.

" A voluminous Table follows the Report, containing the names of the departments, their population, the number of births, of those vaccinated, those attacked with the small-pox, those rendered infirm or disfigured by that disorder, those who died of it; the proportion of vaccinations to the number of births, the names of the operators; the amount of the expenditure for promoting vaccination; and general observations. The total result taken from

this Table, occupying twenty-six pages, may be collected from the following recapitulation :

	Population	Births.	Vaccinations.	Subjects who had the small pox.	Deformed or infirm from it.	Died of small-pox.	Proportions of Vaccinations to Births.
31 Departs. 1818	. . . . .	722,589	442,945	43,939	2,392	6,171	1 in $1\frac{1}{3}$
31 Departs. 1819	. . . . .	835,550	425,510	52,036	4,264	6,586	1 in 2
Total. . . .	27,135,119	1,558,139	868,455	95,975	6,656	12,857	1 in $1\frac{1}{2}$

Amount of expenses in the two years, ... { 1818. . . . . 95,292,57 / 1819. . . . 101,914,33 } 198,206,90 fr.

On the use of Carbonate of Iron in Neuralgia, or Tic Douloureux.—The English Journals continue to confirm the beneficial effects resulting from the use of carbonate of iron, in cases of Tic Douloureux, a practice suggested not long since by Dr. William Hutchinson of London. The Medical Repository of London, for May, 1821, contains the detail of a case of this disease, by Dr. Carter, in which blisters, lotions of various kinds, opium, bark, and ammoniated tincture of Guaiacum had been used successively, for a length of time, without in the least mitigating the tortures of the patient. At last recourse was had to the carbonate of iron. On the 13th of January, he began taking a scruple every three hours, made into an electuary, with confectio. aromat. and syrup. 26th, had been quite free from pain for four days. His appearance was much improved, and he complained of nothing but numbness of the side of the face. February 3d, no recurrence of pain. Iron discontinued. February 8th, numbness nearly gone. No return of pain. He remained perfectly well.

To the same effect are several cases related by Drs. Richmond and Hutchinson, in the London Medical and Physical Journal, for September and November, 1821. Dr. Hutchinson does not by any means contend that iron is a *specific* in this disease. In his observations on this subject, he says, " a professional experience of

nearly thirty years has taught me not to place imiplcit confidence in the curative and specific agency of any remedy at present known. We are not in these days to be taught, that the bark will not always subdue the paroxysms of intermittent fever, and that even mercury* has been known to fall short of the subjugation of syphilis. The carbonate of iron has, in a few instances under my own cognizance, been inadequate to the difficult task of curing the tic douloureux. I can however assert, that, in these very few instances, it has done more towards alleviation than any other known remedy. The carbonate of iron has been frequently given in very improper cases, and in the most injudicious manner, without any due consideration of peculiarities of constitution, or of the proximate cause of the disease; circumstances essentially requisite to be attended to in the administration of a powerfully stimulant remedy. In the very few unsuccessful cases under my own management, I can almost uniformly attribute the want of success rather to the absence of a due perseverance in the use of the remedy, than to any failure in its power. It ought also to be perfectly understood that collateral means of relief have uniformly been used in conjunction with the iron, and that the treatment is by no means confined to one remedy. Where symptoms of active inflammation have existed, the means usually employed to subdue inflammation have been had recourse to, and the iron either suspended or never used."

As a specimen of the general mode of treatment pursued by Dr. H. we select the following case:

"At the expiration of a year's suffering, Mr. Todd applied to me; and I immediately commenced that plan of management which experience had taught me to be the most successful. In the middle of last May he began to take one drachm of the carbonate of iron three times a-day; and I directed him to make use of an ointment to the affected cheek every night, consisting of the tartrite of antimony, powdered opium, camphor, and mercurial ointment;

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* "The fact that it [mercury] acts with equal rapidity and effect upon all cases of inflamed iris, whatever their origin, seems to me to show that the idea of a *specific* antisyphilitic virtue possessed by this mineral is an erroneous one."—*Vide* COOPER'S *and* TRAVERS' *Surgical Essays*, Part I. 3d edition.

one drachm of which was used each evening, until a plentiful crop of pustules appeared : its use was then suspended a few days, and renewed when the eruptions were healed.

This plan was duly persevered in for three weeks, when my patient had experienced some very trifling degree of relief. The medicine now produced uneasy sensations in his bowels, which were removed, and in future prevented by mixing the powder with the confect. aromatic. instead of honey ; and, if diarrhœa at any time accompanied its exhibition, five drops of the tinct.opii added to each dose restrained any inordinate action of this nature.

During the ensuing six weeks my patient pretty regularly persevered in the same plan, modifying and altering the treatment according to existing symptoms, occasionally omitting the medicine a day or two from unforeseen circumstances. During this period he gradually lost his pains, and he is now perfectly well.

Hydrophobia.—An interesting memoir on Hydrophobia has lately been presented to the public, by M. Marochetti, a Russian Physician, which throws new light on this disease, and opens a new field for medical inquiry. The memoir was first read before the Medico-Physical Society of Moscow, and afterwards printed at St. Petersburgh, from whence a copy of it was transmitted to our friend Dr. Mitchill, by Mr. Middleton, Minister Plenipotentiary from the United States to the Russian Court. Dr. Marochetti affirms, that before the discovery which he announces, physicians were ignorant of the true seat of this disease. He professes to point out certain indications for discovering the existence of the hydrophobic poison, and the means of destroying its activity in an infected subject. The following are the conclusions which he states he has drawn from a most scrupulous attention to hydrophobia.

In the first place, he is convinced by experience, that if several persons are bitten in succession by a rabid animal, the first bitten exhibits in the development of the disease, more serious and violent symptoms than the second, this more than the third, and so on ; the poison acting always in an inverse ratio to the numbers, in such a manner that the eighteenth or twentieth person may be considered out of danger. Such a case sometimes happens.

Secondly, the hydrophobic virus does not constantly reside in

the mouth of the mad animal.—It gathers there only at the end of a certain time. The bite, in this interval, is not to be considered as venomous. Here is another case in which the rabies is not communicated.

Thirdly, the hydrophobic virus does not lose, like the pestilential miasma, any of its intensity in being communicated from one body to another—but it acts with more or less violence in proportion to its quantity. Unfortunately, the effect is not the less fatal, by reason of its quicker or slower operation.

Fourthly, it is evident that this virus does not continue in the wounds; but is conveyed in its full force to a part of the body presently to be described. In this part, it instantly acts as a most powerful *astringent*, and, by accumulation, inflames and shuts the passages, by which nature endeavours to expel it from the animal economy.

Fifthly, there is one, and only one way, to prevent the development of hydrophobia in a person who is threatened with it. He declares boldly, and experience he says will bear him out in the assertion, that this is to evacuate the hydrophobic virus when it appears. Where does this reside? and how can it be evacuated?

Sixthly, the sub-lingual glands are two in number, one on each side, under the tongue, between the genio-glossi muscles, the lower jaw, and the inner membrane of the mouth, which immediately covers them. From these glands proceed two or three secretory ducts, which open into the ducts of the sub-maxillary glands, and those latter open one on the one side, and the other on the other side of the frenum of the tongue—it is precisely to the extremities of these ducts that the hydrophobic virus is conveyed after a bite inflicted by a rabid animal, and there it is *temporarily* detained, forming at the two spots just described, one or two small tumours of unequal size. By touching, which may be done with a probe, it is found that there is contained a fluctuating humour, which is, as absorption proves, the hydrophobic poison itself. It is there that nature delivers to us her enemy. It is from this hold that the surgeon ought to expel him.

Seventhly, the time cannot be exactly defined at which these small tumours will show themselves. If the virus is not evacuated in 24 hours it disappears by *re-absorption*. Then no trace

is left of its pre-existence. There takes place a double metastasis toward the brain. The most frightful symptoms of hydrophobia commence, and the patient sinks under one of its paroxysms.—On opening the body, nothing remarkable is observed; pathological anatomy, after all its explorations, has not discovered any indication capable of fixing the attention of physicians, and of rendering an explanation of the causes, because they did not understand the *re-absorption* of this virus.

Eighthly, the first thing to be observed when a person believes he has been bitten by a mad animal, is the lower side of the tongue, which ought to be examined for six weeks, once, or even twice a day, for more perfect precaution. If at the end of this term, there is no appearance of the small swellings already described, we may rest assured that the individual is not to be infected with hydrophobic virus. During these examinations, if the tumours appear they must be instantly cauterized, or, what is better, opened with a small sharp lancet. This operation is performed by raising the tongue with one hand, covered with a suitable cloth, toward the palate, and somewhat sideways, to the end that the small buttons or tumours may be easily touched. For a greater convenience the tongue ought to be supported by an assistant; so that there may be made as many longitudinal incisions as there are lumps. From these latter there will proceed some drops of a sanious lymph, somewhat greenish, which the patient operated upon, will spit out. As soon as the operation is over, the patient must wash his mouth with a strong decoction of the tops and flowers of the Genista lateo-tinctoria. It is almost superfluous to observe, that this decoction must be prepared in advance, for it must be regularly taken, during the six weeks that the patient is under examination, as a common drink. The dose is a pound and a half per day, in decoction; or four drachms a day in powder, in doses of one drachm each. The prescriber, however, will always take into consideration the age and constitution of the patient.

Ninthly, he observes that the operation, which consists in opening the small tumours, has the great advantage of being so simple and so easy to execute, that not only professional men, but every individual who has seen it performed two or three times, can perform it himself. This is very important for the small towns and

villages, where, as yet, there are no settled and established surgeons,

For his discovery of the seat of this disease, and the method of treating it, Dr. Marochetti acknowledges himself indebted to a Russian Peasant living near the village of Kigawka, who, it is said, has for a number of years made a business of attending persons bitten by hydrophobic animals, and with uniform success. This plain man begins by examining, every morning and evening, the lower or under part of the tongue of the individual bitten; and as the sublingual tumours appear, he opens and cauterizes them with a sort of large needle heated red hot in the candle, and causes the patient to rinse the mouth with the decoction of the genista, which is also used internally. Of fourteen persons bitten by one hydrophobic dog, and treated by the Peasant under the immediate observation of Dr. M., twelve underwent the operation of opening their sublingual tumours, and were saved. The two others who were bitten last, had no tumours. These fourteen persons, after having for six weeks made use of the decotion of genista, were discharged cured.

Dr. Marochetti states that of twenty-six persons who were bitten by one hydrophobic dog, and successfully treated by him, nineteen had swellings under the tongue. Of these individuals, they who had the deepest and most numerous wounds, experienced the tumours on the third day; the rest on the fifth, seventh, and ninth days; and in one woman the swellings did not appear until the twenty-first day after the bite.

The succession of the precursory symptoms, observable during the formation of the small pustules or tumours, requires the greatest attention. Towards that stage, says Dr. M. the pupil of the eye is dilated and fixed; the look is sad; uneasiness is complained of; and there is a small pain in the head. These are the only symptoms he has been able to detect.

After the disclosures he has made concerning the hydrophobic virus, Dr. M. considers the disease as a local evil, of which it is possible to prevent the consequences by a seasonable removal of the morbific matter. For after the re-absorption has taken place, there are no means of arresting its terrific effects. He thinks it may be thence concluded, that the known symptoms of hydrophobia, such as constriction of the breast, violent pain in the

head, dilation of the pupil, occasional palsy of the tongue, convulsions, dread of liquids, all nervous symptoms, are produced by the re-absorption of the hydrophobic poison.

Injections of Spirit of Turpentine in cases of obstinate Constipation. In the London Medical Repository for September, 1821, a case of obstinate Constipation is recorded, in which, after all other remedies had failed, an injection of Spirits of Turpentine proved successful in opening the bowels. The patient had passed about thirteen days without any alvine evacuation. His symptoms at last became so urgent, that Mr. Williams, the surgeon in attendance, determined to have recourse to the use of Turpentine. He accordingly beat up an ounce of spirit of Turpentine, and the yolk of two eggs, with half a pint of gruel, and succeeded in throwing up about four ounces. It occasioned an immediate tenesmus and smarting at the anus, and in less than half an hour his patient had a full and copious motion; the hiccup and vomiting, which before this had been very distressing, ceased, and he got several hours sleep. Before night he had another evacuation, and the next day five more natural stools, after which he continued slowly to recover.

Cathartine, the active Principle of Senna.—MM. J. L. Lassaigne and H. Fenuelle, in examining senna, obtained from it a particular principle called by them cathartine. A decoction of the leaves was made, and, after being filtered, was precipitated by acetate of lead. The precipitate collected was diffused through water, and sulphuretted hydrogen passed through it. The liquor filtered was evaporated to dryness, and digested in alcohol, and the alcoholic solution then evaporated to dryness. It contained acetate of potassa, which was separated by alcohol acidulated by sulphuric acid: then filtering to separate the sulphate of potassa insoluble in this fluid, precipitating the excess of sulphuric acid by acetate of lead, decomposing this latter salt by sulphuretted hydrogen, filtering again and evaporating to dryness, a substance was obtained, which was considered the purgative principle of senna.

This substance is uncrystallizable, of a reddish yellow colour, of a particular smell, a bitter and nauseous taste. It is soluble in alcohol and water in all proportions; insoluble in ether. Its ex-

tract becomes moist in the air. It purges in very small doses.—*London Med. Repos. for September*, 1821.

Piperin, or the active Principle of Pepper.—Piperin is a new vegetable principle, extracted from black pepper, by M. Pelletier. To obtain it, black pepper was digested in alcohol repeatedly, and the solution evaporated, until a fatty resinous matter was left. This, on being washed in warm water, was left of a good green colour, and had a hot and burning taste; it dissolved readily in alcohol, and less readily in sulphuric ether; concentrated sulphuric acid gave it a fine scarlet colour. A solution of this substance in hot alcohol, being left for some days, deposited a number of small crystals. These were purified by repeated solution and chrystallization in alcohol and ether, and from the mother liquors, fresh portions were obtained, which, on purification, were like the first. It is to be remarked, that the pepper taste they possessed when impure, gradually left them as they became more and more pure; so that the white crystals scarcely had any taste, while it seemed to accumulate in the fatty matter, as the crystalline portion was separated from it: and also, that the purer the crystals, the finer the tint produced in them by sulphuric acid. The fatty matter left, also reddened by sulphuric acid; but it is a question whether it would do so when pure.

The crystalline matter forms colourless four-sided prisms, with single inclined terminations; they have scarcely any taste. Boiling water dissolves a small portion; but it is insoluble in cold water; it is very soluble in alcohol, less so in ether; it is soluble in acetic acid, and crystallizes from it in feathery crystals. Weak sulphuric, nitric, and muriatic acids, do not dissolve or act on it; the strong acids decompose it. Strong sulphuric acid gives it a blood-red colour, which disappears on adding water; the substance does not seem altered if the acid has not remained long on it. Muriatic acid acts in the same way, producing a deep yellow colour. Nitric acid makes it greenish yellow, orange, and then red; the ultimate action of the acid produces oxalic acid, and yellow bitter principle. It melts at about 212°. Destructive distillation converts it into water, acetic acid, oil, and carburetted hydrogen gas: no ammonia is formed. Oxide of copper converts it into carbonic

acid and water. After comparing this substance with other vegetable principles, particularly with resins, M. Pelletier concludes by considering it a peculiar substance, and names it *Piperin*.

The fatty matter left, after extracting the piperin, is solid, at a temperature near 32° ; but liquefies at a slight heat. It has an extremely bitter and acrid taste ; it is very slightly volatile, and tends rather to decompose, than rise in vapour ; that which passes over is not so piquant and acrid as the undistilled part, but is more balsamic. It dissolves easily in alcohol and ether, and unites to fatty bodies ; and, with the exception of its taste, does not differ from them. From the result of the distillation, it may be considered as composed of two oils : one volatile and balsamic ; the other more fixed, and containing the acridness of the pepper.

Finally, M. Pelletier finds in pepper—1, Piperin ; 2, a very acrid concrete oil ; 3, a volatile balsamic oil ; 4, a gummy coloured matter ; 5, an extractive principle ; 6, malic and tartaric acids ; 7, starch ; 8, bassorine ; 9, lignin ; 10, earthy and alkaline salts. He concludes, also, there is no vegetable alkali in pepper ; that the crystalline substance of pepper is a peculiar body ; that pepper owes its taste to an oil but little volatile ; and that a strong similarity exists between common pepper and cubebs, as illustrated by the analysis of M. Vauquelin, of the latter compared with the former.—*Ib.* p. 337.

Nitrate of Potass.—Mr. Tordeux, an apothecary at Cambrai, has had occasion to examine some hexaedral and circular crystals, which he found in a mass of the extract of cochlearia officinalis that had been lying by for a considerable length of time. They consisted of nitrate of potash, which salt Mr. Tordeux has since been able to obtain from the same plant, by means of subacetate of lead, sulphuric acid, and concentrated alcohol. The presence of nitrate of potash in the cochlearia would explain the diuretic properties which that plant is known to possess.—*London Med. and Phys. Journal, for Nov.* 1821.

Sarcocele.—M. Maunoir, of Geneva, has recently recommended to the surgical profession a mode of treating sarcocele, without extirpation of the testicle. This consists in cutting off the main current of blood from the organ, by tying the spermatic arteries.

He recommends these vessels to be tied close up to the ring, so as to interrupt the circulation through as many of the small branches as possible. Previous to an operation, however, it is necessary to distinguish sarcocele from medullary fungus of the testicle, with which, he thinks, it is too often confounded.

M. Maunoir put this proposal to the test in two cases. In one, the spermatic artery was tied on the 8th of June, 1820, and divided below the ligature. By the 4th of July, an evident diminution had taken place in the tumour. On the 20th of August the patient quitted the hospital, his testicle being without pain, and not larger than the sound one. Hydrocele was combined with enlargement of the testicle in this case, and the water had been twelve times evacuated, but still returned. The pain ceased the moment the artery was divided, and the hydrocele was radically cured. The suggestion deserves some attention from our surgical brethren.

Johnson's London Medico-Chirurgical Review.

Mr. J. Taylor, mining engineer, has made some remarks on Mr. Schoolcraft's account of the copper of the southern shores of Lake Superior. He denies that the discovery of masses of native copper is generally considered indicative of the existence of mines in the neighbourhood. It is an opinion which does not rest on the testimony of practical men. Although native copper frequently occurs in some of the best mines of that metal, it is comparatively a rare production, and does not form any notable proportion of their produce. In judging of the probability of any country being productive of copper, a miner should attend to the appearance or discovery of regular veins, to their extent, to the rocks in which they occur, the substances which they contain, and to many other things which he would deem more important than any casual specimens of the metal or its ores, and particularly the richer varieties.

With regard to the probability of copper being found in the country described by Mr. Schoolcraft, near Lake Superior, so as to become an object of research, it appears to Mr. Taylor that there is very little to encourage such an expectation. Scattered fragments of native copper are found inclosed in masses of rock not even *in situ*, their situation uncertain, the rock itelf not com-

monly productive of copper, the surrounding country alluvial, or composed of red sand-stone, no indication of veins, and no appearance of such substances as are most frequently found accompanying the ores.—*Thompson's Annals of Philosophy, January*, 1822.

M. Berzelius has lately examined the Alkaline Sulphurets. Vauquelin had before conjectured, that Hepar was a mixture of sulphate of potash and sulphuret of potassium, and his opinion was supported by the experiments of Gay Lussac. Berzelius has placed the question beyond doubt. Part of the potash is reduced to form the sulphuric acid, which unites with a part of what is not decomposed. The ordinary Hepar is considered as a mixture of one atom of sulphate of potash, with three atoms of sulphuret of potassium. Berzelius also found that potassium and sulphur unite in seven different degrees.—*Edinburgh Philosophical Journal*, 1822.

Corvisart.—The following account of the funeral of the celebrated CORVISART, who lately died in Paris, is extracted from a French Journal. We hope to be able to furnish, in our next number, a biographical sketch of this ornament of the Medical profession.

" The obsequies of M. le Baron de Corvisart, physician, took place to-day. In pursuance of the directions contained in his will, his body was not taken to the church of St. Elizabeth, his parish, but was conveyed to his estate at Atys, where he desired that the religious ceremonies should be performed. A deputation from the Faculty of Medicine, in their doctor's robes, (*en habit doctoral*,) and nearly all the physicians of Paris, repaired this morning to his late residence, Rue de Vendome, for the purpose of attending his funeral. Mr. LEROUX, *doyen* of the physicians of Paris, pronounced a discourse over his coffin. The body, covered with the mantle of a doctor, and with the different orders which had been conferred upon the deceased, was afterwards placed in a hearse, to be taken to its destination, whither the deputation of the Faculty, and a great number of other persons, accompanied it."

METEOROLOGICAL OBSERVATIONS

FOR JANUARY, 1822.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.*			Winds.			Rain.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 A M	2 P M	9 P M	Gauge.	
1	30 20	30 00	30 00	26	40	38	sw	sw	sw		cloudy
2	30 00	30 00	30 00	32	38	30	sw	nw	nw		clear
3	30 00	30 00	30 00	22	38	36	nw	sw	sw		do
4	30 00	30 00	30 00	12	20	8	n	n	n		cloudy
5	30 00	30 00	30 00	0	19	16	nw	nw	nw		clear
6	29 90	29 90	30 00	18	30	29	sw	sw	sw		variable
7	30 28	30 28	30 20	15	40	30	nw	nw	nw	—.05	do
8	30 10	30 10	30 10	28	40	36	ne	ne	ne	—.95	cloudy
9	30 10	30 20	30 20	25	40	20	nw	nw	nw		clear
10	30 50	30 40	30 40	12	26	16	nw	nw	nw		cloudy
11	30 40	30 30	30 20	5	32	22	nw	nw	nw		clear
12	29 90	29 90	29 90	20	40	30	sw	sw	sw		cloudy
13	29 90	30 00	30 00	25	32	10	sw	sw	nw		do
14	30 33	30 33	30 30	–2	30	27	nw	nw	sw		variable
15	30 10	30 20	30 30	14	30	28	sw	sw	sw		do
16	30 60	30 70	30 90	25	40	19	n	n	n		clear
17	31 00	31 00	30 90	8	30	20	n	n	n		do
18	30 70	30 70	30 60	10	40	38	n	sw	sw	—.19	variable
19	30 40	30 40	30 40	40	45	38	sw	sw	sw		cloudy
20	30 40	30 40	30 40	30	45	36	sw	sw	sw		do
21	30 20	30 20	30 00	28	38	36	w	w	w		do
22	30 00	29 90	29 80	35	46	10	w	w	w		do
23	29 80	29 80	30 00	20	22	10	nw	nw	nw		do
24	30 10	30 10	30 30	0	10	13	nw	nw	nw		clear
25	30 40	30 40	30 40	0	22	8	nw	nw	nw		do
26	30 40	30 40	30 40	6	31	30	nw	sw	sw		cloudy
27	30 40	30 40	30 40	10	30	19	sw	sw	sw		do
28	30 30	30 40	30 40	10	40	20	sw	sw	sw		do
29	30 30	30 20	30 20	18	53	36	se	se	se		do
30	30 20	30 20	30 00	32	32	35	se	se	se	—.04	do
31	29 90	29 90	29 90	30	31	32	ne	ne	ne	—.12	do

* *The thermometer was suspended on the east side of the Hospital, between its two projecting wings; hence, the temperature at 2 P. M. was increased by radiant heat from the wall. In future it will be placed in a situation where the reflected rays of the sun can have little or no influence upon it.*

The quantity of rain which fell in January, is 1 inch and 35-100ths. The coldest day this month was the 14th, when the Mercury stood at 7 A. M. 2 degrees below Zero of Fahrenheit. Snow fell on the 6th and 8th in small quantities, which soon disappeared; on the 27th a sufficient quantity fell to afford good sleighing. There fell a little sleet on the afternoon of the 10th. The sun was obscured on the 4th, 13th, and 20th.

METEOROLOGICAL OBSERVATIONS

FOR FEBRUARY, 1822.

Made at the New-York Hospital, by RICHARD PENNELL, M. D.

	Barometer.			Thermometer.			Winds.			Rain.	Weather.
	7 A M	2 P M	9 P M	7 AM	2 PM	9 PM	7 A M	2 P M	9 P M	Gauge.	
1	29 90	29 90	30 00	32	37	25	ne	nw	nw		cloudy
2	30 40	30 40	30 40	28	50	29	nw	nw	nw		clear
3	30 40	30 40	30 40	20	48	37	sw	sw	sw		cloudy
4	30 00	30 00	30 20	32	40	30	sw	nw	nw		do
5	30 50	30 50	30 40	15	30	27	nw	nw	sw		clear
6	30 30	30 20	30 30	32	38	30	sw	nw	nw		cloudy
7	30 40	30 30	30 30	15	30	17	nw	nw	nw		do
8	30 30	30 30	30 20	12	38	25	w	w	w		do
9	30 00	30 00	30 00	15	40	30	nw	nw	nw		do
10	30 00	30 00	30 30	30	38	25	nw	w	w		do
11	30 00	30 00	30 00	20	34	27	sw	sw	sw		clear
12	29 90	29 90	29 90	20	36	34	sw	sw	sw		cloudy
13	29 90	29 90	29 90	25	32	23	ne	ne	ne		do
14	29 90	29 90	30 00	19	30	25	ne	ne	ne		do
15	30 35	30 40	30 40	10	40	26	nw	nw	nw		clear
16	30 40	30 30	30 20	25	40	38	sw	sw	sw	1.20	cloudy
17	29 90	29 90	30 00	38	40	40	sw	sw	sw	—.02	do
18	30 00	30 00	30 00	30	30	30	ne	ne	ne		do
19	30 04	30 04	30 04	15	40	20	nw	nw	nw		clear
20	30 30	30 30	30 30	10	40	22	sw	sw	sw		cloudy
21	30 00	30 30	29 90	48	55	48	se	se	se	1.23	do
22	29 90	30 00	30 00	45	60	46	se	nw	nw		variable
23	30 40	30 40	30 40	35	56	40	nw	nw	nw		clear
24	30 40	30 40	30 40	45	60	38	sw	sw	sw		do
25	30 30	30 30	30 40	32	32	30	nw	nw	nw		do
26	30 40	30 30	30 30	20	50	37	nw	sw	sw		variable
27	30 30	30 30	30 30	40	60	47	sw	sw	sw		clear
28	30 30	30 30	30 30	46	62	55	sw	sw	sw		variable

The quantity of rain which fell in February, is 2 inches 45-100ths.

It has been generally remarked, that this month was mild, and very unlike the same month in the preceding year. On the morning of the 4th, a small quantity of snow fell, wind S. W., changed at 1 P. M. to N. W., when the snowing ceased; at 9 P. M. lunar halo. On the 6th, at 4 P. M., fall of snow for the space of half an hour; wind N. W. On the 14th, snow at 8 A. M.; in the course of the day it fell to the depth of an inch and a half on the level. Snow, with a very strong wind from the S. E. on the 18th. On the 21st a gale from the S. E. brought a copious rain which

melted the snow with astonishing rapidity. The flood thus produced was very destructive to bridges, mill-dams, roads, &c.; the ravages extending through the northern and middle states, particularly in the vicinity of the coast. The rain continued during the forenoon, but about 2 P. M. the clouds began to disperse, and the sun became visible a short time previous to the commencement of an eclipse. This interesting phenomenon was accurately observed with a good three-and-a-half feet achromatic telescope, by a gentleman of this city; but he regrets the going of his watch had not been previously adjusted.

The time noted is as follows: Commencement, 26 minutes 30 seconds past 3 P. M. End, 9 minutes 25 seconds past 5. Much lightning in the north at 9 P. M. The sun was obscured on the 6th and 13th.

OBITUARY.—Died recently at Albany, JAMES LOW, M. D. aged 39. Dr. Low was for a considerable period of his life eminently distinguished as a learned and excellent Physician. He graduated in the University of Edinburgh, in the year 1809, after having prosecuted his Medical studies under the particular direction of the late distinguished teacher of Chemistry, John Murray, M. D.

NOTICES.

The following work, just published by James V. Seaman of this city, has been received, and will be reviewed in our next number, viz. System of Surgical Anatomy. Part first, on the structure of the Groin, Pelvis, and Perineum, as connected with Inguinal and Femoral Hernia; Tying the Iliac Arteries; and the operation of Lithotomy, illustrated with nine copperplate engravings. By William Anderson, Licentiate of the Royal College of Surgeons in Edinburgh, and Lecturer on Surgical Anatomy in New-York.

An Essay on the Chemistry of Animated Matter, by John Patten Emmet, has also just been published. It shall be noticed in our next number.

Several interesting articles, on subjects connected with Medicine and Natural History, have been unavoidably excluded from the present number of our Journal.